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MONGOLIA
SOURCES OF GROWTH
COUNTRY ECONOMIC MEMORANDUM

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Poverty Reduction and Economic Management Unit
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WEIGHTS AND MEASURES
Metric System

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ABBREVIATIONS AND ACRONYMS

BHP	Broken Hill Proprietary
BoM	Bank of Mongolia
BSE	Bovine Spongiform Encephylitis ("mad-cow" disease)
CIVED	Civic Education
CORFO	Corporacion de Fomento
CMEA	Council of Mutual Assistance
CMMI	Capability Maturity Model Integration
CPIA	Country Policy and Institutional Assessment
DSA	Debt Sustainability Analysis
EITI	Extractive Industries Transparency Initiative
ESMP	Education Sector Master Plan
GAP	Governance Assistance Project
GDP	Gross Domestic Product
GFMIS	Government Financial Management Information System
GNI	Gross National Income
GoM	Government of Mongolia
FDI	Foreign Direct Investment
FONDECYT	Fondo Nacional de Desarrollo Cientifico y Tecnologico
FSU	Former Soviet Union
GAC	Governance & Anti Corruption
HIES	Household International Expenditure Survey
ICA	Investment Climate Assessment
ICS	Investment Climate Survey
ICT	Information & Communications Technology
INEA	Institute for Adult Education
INIA	National Institute of Agriculture Research
IMF	International Monetary Fund
IP	Intellectual Property
ISO	International Organization for Standarization
KAM	Knowledge Assessment Methodology
LSMS	Living Standards Measurement Survey
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
MFA	Multi-fiber Arrangement
MDGs	Millennium Development Goals
MIaT	Ministry of Industry & Trade
MOF	Ministry of Finance
MPAM	Mineral & Petroleum Authority of Mongolia
MTBF	Medium-term Budgeting Framework
MTC	Mongolia Telecom Company
NASA	National Assessment of Students' Achievement
NPV	Net-Present-Value
NGO	Non-governamental Organization
NPLs	Non-performing Loans
NSO	National Statistics Office
OECD	Operations Evaluation Country Department
PICS	Productivity and Investment Survey
PIP	Public Investment Program
PIT	Personal Income Taxes
PPPs	Public-private Partnerships
R&D	Research and Development
SCC	Savings and Credit Cooperatives
SEG	Socio-economic Guidelines
SME	Small and Medium Enterprises
SPS	Sanitary and Phyto-sanitary
STVP	Skills Training Voucher Program
TEU	Twenty-foot Equivalent Unit
TFP	Total Factor Productivity
TIMSS	Trends in International Mathematics and Science Study
TVET	Technical and Vocational Education and Training
UNCAC	United Nations Convention against Corruption
UNDP	United Nations Development Program
USAID	United States Agency of International Development
UNSW	University of New South Wales
UB	Ulaanbaatar
VAI	Value Added Tax
VTC	Vocational Training Centers
WHO	World Health Organization
WB	World Bank

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MONGOLIA

SOURCES OF GROWTH
Country Economic Memorandum

TABLE OF CONTENTS

ANNEXES

BOXES

FIGURES

TABLES

ANNEX II

FIGURES

TABLES

MONGOLIA
SOURCES OF GROWTH
Country Economic Memorandum

EXECUTIVE SUMMARY

Over the past decade of economic transition, the structure of the Mongolian economy has changed…

1. Mongolia's transition from a planned economy to a market economy, which began in the early 1990s, has proceeded quite well relative to most other countries in similar circumstances. Fundamental economic reforms have been undertaken by the Government in the areas of price liberalization, privatization and the establishment of market institutions. Concurrently, progress has been made towards reducing the incidence of poverty. While Mongolia has suffered bouts of inaction on reforms and attendant crises in the past decade, it is noteworthy that there has been no reversal of the overall reform path towards a market-oriented economy. Unlike several Eastern European countries, Mongolia's transition was largely unhindered by widespread social or political unrest, although the young democracy is still being perfected.

2. Today, one is seeing a country with a strong macroeconomic performance—in terms of GDP growth and low inflation—buoyant prices of its main mineral exports copper and gold, widening current account and fiscal surpluses, and has seen an appreciating nominal and real exchange rate for the Togrog vis-à-vis the U.S. dollar. The associated gains in economic well-being have occurred while at the same time Mongolia has, by and large, protected the high levels of human development that are a legacy of its socialist period. The biggest turnaround over the past five years has been in the tertiary/services sector in Mongolia, especially retail and wholesale trade, transport, communications and financial services, where average value-added growth has been at around 8 percent per annum during 2001-2004 and 9.1 percent in 2005. Foreign direct investment has been rapidly growing in mining and construction activities. The average share of FDI in Mongolia's GDP of 5.2 percent for the 10-year period (1996-2005) was higher than the average for the East Asia region, and more than three times that for the low-income country group to which it belongs. Clearly, despite political uncertainties, these are good times.

…the sources of real GDP growth have become very concentrated, and heavily dependent on mining and livestock sector activities.

3. Looking deeper into these overall trends, one cannot escape from concluding, however, that some of the very developments that have shaped recent economic conditions and history are likely to become constraints to Mongolia's continued prosperity and sustained high growth. Mongolia's heavy dependence on the exports of a few key commodities—gold, copper, cashmere—has made its economy particularly vulnerable to fluctuations in commodity prices and natural disasters. Employment

generation has been elusive despite having a young and educated labor force. The population of the country is becoming more concentrated in and around Ulaanbaatar.

4. ***Formidable challenges remain*** in managing Mongolia's "tyrannies of distance and isolation;" delivering services equitably and cost effectively; and generating growth that is broadly shared regionally and across income groups. The country faces the challenge of creating new opportunities for its rural population and urban unemployed/discouraged workers. Progress in reducing maternal mortality rates, as well as in improving water and sanitation services, has been less than required to meet the *Millennium Development Goals* (MDGs)—and is particularly lagging in the western part of the country. The recent World Bank Poverty Assessment (2006) for Mongolia finds that of all households with household heads engaged in some form of activity, the herder households had the highest incidence of poverty (41.2 percent). Analysis of household survey (HIES-LSMS) data indicates that livestock mortality shocks translate directly into lower consumption levels for herder households. It also found that the most pressing poverty challenges in Mongolia are related to widespread livestock mortality risks, attrition before upper secondary schooling, and the exorbitant heating cost burden of households. At times, these challenges may all seem daunting, but the prevailing good times provide a politically difficult but fruitful opportunity to use the gains to address the vulnerabilities that Mongolia's transition to a market economy brings and make prudent policy decisions to benefit a wide spectrum of Mongolian citizens (rural and urban) over the medium-term.

5. ***The Government's strategy to deal with these challenges***, and instruments to implement it, are being formulated under its draft *National Development Strategy* (NDS). This is being linked to its *medium-term budget framework* (MTBF), its associated annual budgets, and its *Socio-economic Guidelines (SEG)* documents that are all discussed in Parliament. The *public investment program* (PIP) remains to be formulated in a manner consistent with the MTBF with a view towards maintaining fiscal sustainability, and with consistent sector strategies covering the same time-frame. The Government has made commendable efforts to finalize its medium-term Health and Education Master Plans, while it is at an advanced stage in articulating its Infrastructure Development Strategy. Meanwhile, a medium term *Public Debt Management Strategy* needs to be articulated by the Government and communicated to market participants. Capacity building efforts are underway in the Government in collaboration with its external development partners, including the World Bank, to put in place institutional arrangements, regulations and appropriate staff to get these tasks done.

6. This Economic Report aims to inform the ongoing debate on the Government's long term development priorities in Mongolia. It discusses the key facts and potential implications the Government would need to consider when determining its public spending, public investment program, fiscal space, and borrowing strategy going forward. In this context, the objective is to identify reforms where the direct beneficial effect could be the largest in terms of broad-based employment generation and sustainable growth.

What are the "binding constraints" to broad-based and sustainable growth?

7. The "growth diagnostics" analysis undertaken in this study has helped narrow down the main areas where immediate policy intervention should generate "quick wins" in terms of unleashing the economy's potential to maintain its high GDP growth, and at the same time, to diversify exports and its other sources of growth. It should be noted, however, that Mongolia's mining sector will remain a dominant source of its long-term growth for some time to come. It is the fastest growing sector today, although official estimates suggest that this sector currently accounts for only 4 percent of Mongolia's labor force and uses relatively capital-intensive methods of production. For Mongolia today, these areas (or "binding constraints" as the economic literature calls them) that need immediate policy intervention are the following:

- *Infrastructure bottlenecks* that have led to costly transport, complex logistics, and long transit times. For instance, the costs of rail transport, both in terms of unit cost of freight forwarding per Km. or the cost of border crossings to neighboring countries, are much higher than those of other landlocked countries in Asia and the Central Asian Republics. The loading and unloading of cargo from one wagon to another at the China-Mongolia border, due to axle width differences between Mongolian and Chinese railroad cars, can often make up for 25 percent of the overall transport cost to port. Since Mongolia's export volume on the railroad is about 10 percent of the volume for goods being imported by rail, the fee for an empty container that returns to the border adds to the transport cost, especially for Mongolian exporters that significantly rely on imported intermediate inputs.
- *Distortionary taxes*, including lately in mining sector activities, and complex customs and trade rules that have increased the implicit cost of doing business in Mongolia. The tax base is narrow, with the top 100 taxpayers paying over 90 percent of the government's tax revenues. In addition, the tax code may have motivated firms to operate in the informal sector. The latter issue is being addressed by the Government under the tax reforms that came into effect since January 1, 2007. Meanwhile, uncertainties remain as to the expected impact of the mining tax regime on the incentives it generates. Tax evasion and under-reporting by firms of their labor costs are also widespread. The export tax on raw cashmere has provided incentives to processors to offer herders the same price regardless of quality. Herders have responded by allegedly smuggling cashmere into China and selling high quality raw cashmere to Chinese buyers, thereby depriving domestic processing firms of high quality raw materials. This, in turn, has resulted in Mongolian cashmere firms operating below capacity.
- *Need for better coordination internally and internationally*: between laws and regulations; trade and logistics; sector strategies and implementation plans; as well as, resource use and environmental degradation. These coordination failures have led to the inability of exporters to comply with international quality standards and environmental degradation have occurred in the production processes. For instance, the main obstacle to expanding meat

exports to Russia is primarily the current ban on such imports from Mongolia that was put in place after the outbreak of "foot-and-mouth" disease in 2001. Better coordination in trade and logistics with Mongolia's neighbors is imperative for growth. Prudent investments in infrastructure that have large positive spillover effects are needed to deepen and diversify supply chains within Mongolia's mining sector.

- *Growing corruption and inadequate contract enforcement.* The former is a symptom of rising inequalities and is partly stemming from perceptions of lack of transparency and accountability in policy decision making and public sector governance. World Bank Investment Climate survey (2006) results indicate that unofficial payments, required for obtaining licenses, and the average bribe for different types of licenses, were high—estimated at around 40 percent of the official fees. Firms paying bribes to obtain access to electricity, water, communication infrastructure are respectively 26 percent, 15 percent and 23 percent of all firms surveyed. According to Transparency International and the World Bank's Governance Indicators, corruption in Mongolia has worsened substantially since 2001, and perceptions of corruption as an obstacle to growth are more widespread in Mongolia than in a number of comparator countries. Today, Mongolia ranks 9th out of 62 countries, for which firm level survey data were available, in terms of its share of firms reporting corruption as a major obstacle to their growth. Survey results also found that about seventy-percent of the firms that have had disputes with clients or suppliers that had to be resolved in the Mongolian judicial system indicated that the mechanisms for dispute resolution are a severe impediment to doing business.
- *The high cost of capital*, although lower than in previous years, is primarily due to poor financial sector intermediation. Intense competition among commercial banks to attract deposits by offering high deposit rates have, in turn, put an upward pressure on their lending rates. The difficulty in assessing credit risk of borrowers, coupled with weaknesses in the bankruptcy and debt recovery framework, have forced banks to maintain higher spreads between lending and deposit interest rates and higher collateral requirements relative to comparable counties. Access to capital in Mongolia has been limited for the majority of firms.

8. Alleviating these binding constraints will yield expected outcomes (some quantifiable and others more indirect) in terms of improving returns to private sector activities, give firms the opportunity to "innovate" into new products and markets, and into higher value added products. Taken together, these would contribute towards achieving high and sustained broad-based economic growth over the long-term.

How to address them?

9. Diversify the real sector, including mining and livestock sector activities. Faster diversification of Mongolia's economy depends on:

- *Investment climate reforms*—these include reforms to the tax system and its administration, business regulations and their enforcement, dealing with anti-competitive behavior, and access to land, among others. Improvements in public safety and quality of life in the Ulaanbaatar area, where most of Mongolia's migrating population and new economic activities are congregating, are also crucial in this regard. With an estimated effective tax rate of 62 percent and a marginal tax rate of 80 percent on mining revenues, Mongolia currently has one of the highest effective tax rates in mining in the world.[1] In addition, the Government is currently contemplating a state equity participation in the mining sector that will further lower mining investors' returns. Hence, it is imperative to provide a mining taxation regime that allows for efficient mining operations, encourages value-added processing, encourages exploration, research and development (R&D) and, at the same time, generate revenues for the government to spend prudently.
- *Investment in needed public goods*—productive investment projects with large spillover effects should be encouraged with appropriate monitoring and evaluation mechanisms to be put in place to track public procurement and expected outcomes of these projects. Investments in non-sector specific investments and policies focusing on infrastructure and human capital should be preferred. The ongoing endeavor of the Government to finalize a medium-term infrastructure development strategy is an essential step in the right direction. Efforts should be made to better align pricing with costs of provision of energy, water and sanitation services, improving efficiency and governance in these sectors and better planning of infrastructure investments to reap allocative efficiency, high economic returns and greater poverty alleviation impacts (see Table 1 below).[2] The challenge will then be to link this to a fiscally sustainable public investment program that conforms to its medium-term budget framework and annual budgets.
- *Addressing key workforce issues*—primarily, the under-utilization of human capital and skills mismatches. Idleness rates currently exceed 20 percent for the 25-29 age group. A structural shift in the Mongolian economy is taking place that has raised the demand for foreign language skills, IT and technical skills, and behavioral (e.g., communications) skills. Government policies should accompany rather than attempt to offset the ongoing migration and economic concentration in Mongolia and take advantage of the agglomeration effects it generates.

10. In order to ensure that the Mongolian economy continues to grow by diversifying its non-mineral exports, enter new markets (at home and abroad) and create jobs, it is essential to extract higher value-added from its livestock herd and to motivate firms to provide additional products/services to improve quality and efficiency. Small and medium enterprises (SMEs) could provide much useful support, for example, in water well development/maintenance, fodder production, product quality control, product development, animal breeding and health, insurance, and other financial services.

[1] World Bank staff estimates.

[2] Further details are provided in the recent World Bank Report entitled "Foundations for Sustainable Development: Rethinking the Delivery of Infrastructure Services in Mongolia", June 2007.

Development of new sources of export earnings will need to work around transport constraints. Rail transport will likely remain useful for bulk cargo, while the gestation lags involved with infrastructure development imply that truck transport will be problematic in the next few years for anything except low-value products. Hence, the focus should be on high-value niche products suitable for air cargo, tourism, and "knowledge" products such as software development. To facilitate these possibilities, Mongolia's investment climate should feature ease of business entry, exit and ongoing regulation; a fair, transparent, and pro-growth tax system; good access to finance; enhanced education/skills; and better infrastructure.

11. ***Exploit more systematically Mongolia's position of a transit corridor for trade between its neighbors.*** Appropriate investments in infrastructure and associated policy measures to promote its efficient development and use may go a long way in facilitating trade-routes, cross-country commerce and foreign direct investment. It would help strengthen supply chains and thus improve the investment climate. Given Mongolia's vast territory, small population and harsh weather conditions, this is no easy task. The geography and natural resource bias in the Mongolian economy make it susceptible to exogenous shocks that can have significant adverse effects on growth. Negative terms-of-trade shocks directly reduce real income and resources that are available for investment and consumption.

12. The role of Information and Communications Technology (ICT) in facilitating the acquisition, dissemination and use of knowledge across a country is critical in today's rapidly growing Mongolian economy, more so given the vast geographical territory that needs to be covered by information. This will influence the way in which manufacturers, service providers and the government (central, provincial and local) are organized and how they perform their functions. This should not only be translated into the need for computer hardware and software, but for institutional reforms in key areas such as ensuring timely access of the public to information on government operations, strategies and action plans.

13. ***Address skills mismatches in the labor market, especially for Mongolia's youth and those migrating to urban centers.*** According to the LSMS 2002-03, about 57 percent of workers are family labor or self-employed (79 percent in rural areas). The importance of agriculture is declining but it continues to be the main sector of employment (40 percent), and it is low skill-intensive (small scale and low technology). And the sectors that have increased the most in terms of employment (mining, construction and retail & wholesale trade) are not high skill-intensive. To improve the skills of young people for work and life, education opportunities must be made more relevant to the needs of the market. This involves improving educational preparation for adolescence by providing quality basic education for all. It also involves meeting the growing demand for post-basic skills, by providing diverse and flexible learning options in upper secondary and tertiary education; by implementing a relevant curriculum that teaches practical subjects, thinking skills, and behavioral skills; by blending the academic and vocational curricula, and by connecting school and work.

14. Second-chance education opportunities must also be provided for young people who failed to acquire basic skills the first time around, such as equivalence education and skills training programs. To facilitate transition to work life, the connection between school and work needs to be improved. This goes beyond just providing vocational education and involves strengthening the partnership between industry and schools. Universities are subject to an accreditation system since 1998, but this system is voluntary and weak in terms of the assessment done. The private sector (including foreign institutions) is well established in the higher education sector in Mongolia (73 percent of institutions and 32 percent of students), but less so in the vocational and technical education sector (14 percent of institutions). Here, public-private partnerships (PPPs) can improve learning outcomes and efficiency overall by increasing choices and injecting competition.

15. Prudent management of windfall revenues and an internationally competitive investment climate in the mining sector is imperative. In 2005, the mining sector directly accounted for 18 percent of GDP, 65.5 percent of industrial output, almost 76 percent of export earnings and 20 percent of Government revenue. The economy grew at about 10.7 percent in 2004 (supported by the investment in and the initial gold production from Boroo Gold), 6.2 percent in 2005 and 8.4 percent in real terms in 2006. Mongolia's GDP per capita reached US$1,037 in 2006. The mining sector output has the potential to increase substantially over the next decade. It is projected to double or even triple from 2003 levels by 2010 provided large projects get development approvals and are successfully commissioned. Currently, the formal mining industry sector employs over 14,500 people and the informal (artisanal) mining sector may involve more than twice this number. The government is now in the process of drafting a legal framework for artisanal mining—a commendable step that is in the right direction. The next challenge in this regard will be to implement that new law.

16. The adoption of a stable, competitive and transparent legal, regulatory and fiscal regime for the mining sector will be essential for its continued growth and development. To this end, it is imperative to provide a mining taxation regime that allows for efficient mining operations, encourages value-added processing, exploration, research and development (R&D) and, at the same time, generates revenues for the government for it to spend prudently. International experience suggests that almost all Governments of mineral resource-rich countries choose to have some specific provisions for Mining, and some Governments have entirely separate but transparent mining fiscal codes. In analyzing mining tax systems, it is essential to look at the complete system of all taxes and fees rather than at individual rates in isolation. The total effective tax rate (ETR) should be used as a first step in comparing mining tax packages. Common incentives that other countries have given to mining operators include: accelerated depreciation, loss carry forward, no-ring-fencing rules (i.e. level of consolidation of tax base. Ring-fencing favors existing operators and is complex to implement.), carry forward and amortization of exploration, feasibility and development costs, deductible environmental and closure costs, and deductible community and public infrastructure costs. Although less common, another important incentive is fiscal stabilization. Tax holidays or initially reduced rates, depletion allowances and loss carry back are uncommon and not recommended.

Meanwhile, it is imperative to build capacity of tax agency, especially to collect the mineral taxes owed to Government under the existing tax laws.

17. Investment agreements in the mining sector need to be structured to primarily define the basic rights and obligations of both the government and investors and to stabilize the fiscal provisions upon which investment decisions are based. It is important to ensure that such agreements remain subordinate to existing legislation and apply to the sector as a whole, rather than provisions which result in discriminatory treatment of individual firms. The recent changes to the fiscal and policy regime in Mongolia undermine its competitiveness and could impact negatively on the investor confidence that has been built over the period 2001-2005. In this regard, the authorities must reconsider/re-evaluate the prevailing mining royalty rates, the windfall profits tax, and the share of equity participation by the State in mining projects.

18. It is not only the efficiency of the mining exploration and extraction activities that matter in the conversion of its natural capital, but the way in which these are undertaken that could lead to significant environmental damage, production losses, and a reduction in national wealth. The Government is working to address these challenges by enacting and updating a series of environmental laws, preparing regional economic development plans, strengthening its monitoring and compliance systems as well as the technical skills of its personnel in the relevant government agencies. It is also making efforts at strengthening its ability to back up the Government's plans by better and systematic analysis and projection of environmental impacts.

Even then there are risks that will have to be contended with

19. These risks emerge from both external factors that are beyond the government's control and internally generated ones that may emerge as a result of perverse incentives that may be fueled by government's own policies. Exogenous risks relate to the dependence of the country on natural resources, specifically negative terms-of-trade shocks resulting from commodity price cyclicity, and environmental shocks primarily affecting the livestock sector. Risks also emerge from the threats of an unsustainable fiscal policy and populist spending programs; the weakening of domestic industries in an economy that discovers and exploits an abundant natural resource, such as gold and copper (the so-called "Dutch Disease" phenomenon); domestic policies that may influence the investment climate and the country's attractiveness to foreign direct investment; and the perceptions of corruption and weak governance that tend to raise the costs of doing business. This calls for:

- Good management of windfalls with the goal of maintaining macroeconomic stability, and with due consideration to fiscal and debt sustainability.
- Prudent investment of the windfalls to support productive investments and broad-based growth;
- Institutionalizing counter-cyclical fiscal policy (i.e. minimizing boom-bust cycles through expenditure and investment smoothing) through the budget rather than off-budget vehicles, and

- Develop transparent mechanisms to enhance public oversight of mining revenue expenditures and ensure accountability. To this end, the ongoing efforts of the Government to implement the new anti-corruption law and the *Extractive Industries Transparency Initiative* (EITI) in mining are commendable and must take precedence. This requires the Government to maintain an ongoing financial commitment to collect, compile and publish its mineral revenue statistics over time.
- Strengthening the institutional structure for pastureland management at national and local levels and supporting stronger livestock support services.
- Issuing and enforcing regulations for the insurance industry to facilitate the emergence of a stronger insurance market that is able to cover some environmental risks. In the mining sector, due consideration should be given to mine closure, environmental rehabilitation and clean-up costs when designing the investment agreements and fiscal regime for this sector.

Table 1: Summary of Key Recommendations

Binding Constraint	Target Intervention	Specific Short Term Policy Measures	Other Policy Measures
Infrastructure bottlenecks	• National Development Strategy • Infrastructure Strategy • Medium-term budget • Public investment program	• Prioritize infrastructure public investments. • Formalize sector investment strategies in infrastructure sectors with due consideration to appropriate costing and fiscal sustainability. • Issue regulations to guide public-private partnerships in infrastructure construction and service delivery.	• **Pricing** o Aligning prices with costs of provision to free up resources for maintenance and expansion. o Implementation of transparent, well-targeted subsidy mechanisms to protect the poor. • **Efficiency and governance** o Efficiency improvements to help mitigate necessary price increases. o Improved governance including policy and regulatory reform to help attract new sources of investments from within and outside Mongolia. • **Better planning** o Better allocation of resources to ensure high economic returns and greater poverty reduction impacts. o Prioritize potential projects and maximize the roles of private sector and civil society.
Distortionary taxes	• Overall Investment Climate • Mining Sector fiscal regime • Trade regime	• Carefully design Mining Taxation Package and Investment Agreements with Mining Companies. • Establish clear fiscal rules for	• Improve tax administration. • Improve inspections regime and undertake efforts to disseminate information on firms/consumer rights and requirements in the

Binding Constraint	Target Intervention	Specific Short Term Policy Measures	Other Policy Measures
		management of Development Fund resources and mining revenues. Issue associated implementing regulations.	context of audits and inspections. • Improve Customs Administration.
Better coordination *(in trade and logistics; laws and regulations; sector strategies and corresponding implementation plans ,including on infrastructure spending decisions; efficient natural resource management and minimizing environmental degradation)*	• Reduce transport costs and complex logistics that are faced by firms that rely on trade for their growth opportunities (in mining and non-mining sectors).	• Select public infrastructure investments to link economic nodes/hubs and whose benefits are widespread and non-sector specific. • Begin discussions on harmonizing customs and border trade regulations for goods and services with Mongolia's key trading partners. • Provide information to herders about cashmere/meat products market demand and prices. • Encourage cashmere processors to form strategic links with downstream agents and improve their productivity.	• Reduce transport costs and complex logistics that are faced by firms that rely on trade for their growth opportunities (in mining and non-mining sectors). • Government policies should *accompany* rather than attempt to *offset* the ongoing migration and economic concentration that one is seeing in Mongolia today. • The role of Information and Communications Technology (ICT) in facilitating the acquisition, dissemination and use of knowledge across a country is critical in today's rapidly growing Mongolian economy, more so given the vast geographical territory that needs to be covered by information.
Corruption and inadequate contract enforcement	• Enhance transparency and accountability in public financial management and service delivery. • Develop transparent mechanisms to enhance public oversight of mining revenue expenditures and ensure accountability.	• EITI Implementation: Disclose contents of investment agreements signed by Government with mining companies. • Implement Asset and Income Declaration Law for senior civil servants, candidates running for public office, public sector officials, and Parliamentarians. • Revise procurement regulations and	• Implement Freedom of Information legislation facilitating easy access for all to government information. • Fiscal and public financial transparency of central and local budgets. • Periodic implementation and publicizing of country governance, anti-corruption and public

Binding Constraint	Target Intervention	Specific Short Term Policy Measures	Other Policy Measures
		competitive bidding thresholds so as to create a level playing field in public sector procurement of goods and services.	expenditure tracking surveys. • Facilitate citizen monitoring of overall progress in reform program implementation. • Upgrade professional skills and ethics of public employees through focused training efforts.
High cost of capital	• Address credit risks, liquidation and bankruptcy procedures. • Corporate Governance of banks. • Central Bank readiness to supervise and regulate financial institutions.	• Laws and regulations for SCCs, NGOs and Finance companies should more closely regulate deposit taking activity and promote soundness of small and micro financial intermediaries. • Improve credit reporting and registration of securities interests. • Prohibit/strictly control cross-ownership of financial and non-financial enterprises.	• Develop inter-bank market. • Consolidate banking sector to help reduce administrative overhead costs and excessive competition for deposits. • Desirability and alternatives to deposit insurance should be evaluated.

INTRODUCTION

The previous World Bank *Country Economic Memorandum* (CEM) for Mongolia was completed in 1997. At that juncture, the country was facing a period of declining GDP growth, sharp decline in copper prices (which cut the 1996 real GDP growth to less than half the 6.3 percent achieved in 1995), and continuing inflation since 1994. The fiscal support for weak state enterprises and a banking crisis had fueled inflationary pressures and unleashed administrative price reforms in 1996.

Today, Mongolia is in the midst of good economic times, although political uncertainties remain. The associated gains in economic well-being have occurred while at the same time Mongolia has, by and large, protected the high levels of human development that are a legacy of its socialist period. This overall positive assessment is not meant to suggest that Mongolia does not face formidable challenges in completing its transition to a market economy, managing the "tyrannies of distance and isolation," delivering services equitably and cost effectively, and generating growth that is broadly shared regionally and across income groups. Progress in reducing maternal mortality rates, as well as in improving water and sanitation services, is less than required to meet the *Millennium Development Goals* (MDGs)—with progress particularly lagging in the western part of the country. The recent World Bank Poverty Assessment has found that, despite the decline in overall poverty from 43 percent to 36 percent between 1998 and 2002 on the basis of comparable consumption baskets and consistent coverage and poverty lines, the most pressing poverty challenges in Mongolia are related to widespread livestock mortality risks, attrition before upper secondary schooling, and the exorbitant heating cost burden of households. Since the beginning of 2005, the manufacturing sector has been very seriously affected by the expiration of the quota-system under the WTO Multi-Fiber Agreement. This has led to closures of textile and garment firms and relocation of many of their activities to China. Meanwhile, the processing industry remains stagnant. As a result, the overall, textile industry value added decreased by 41 percent in 2005.

In the short to medium term, Mongolia will continue to rely on the traditional agricultural and mining sectors for growth, while putting in place policies to encourage export diversification and encourage private sector development. Mongolia's heavy dependence on the exports of a few key commodities—Gold, Copper, Cashmere—has made its economy particularly vulnerable to fluctuations in commodity prices and natural disasters. To address this vulnerability continued fiscal discipline and deepening of the structural reform agenda would enable the government to better manage commodity booms and shocks in the future. Increased diversification of the economy will also serve to soften the economic impact of large fluctuations in commodity prices. Overall, with the consolidation of gains from good performance in the last four years, Mongolia should

be well placed to accelerate growth and poverty reduction in the period ahead with sustained support from the external donor community and in the absence of large external shocks.

On March 23, 2006, the new Government issued its priority areas with the goal "to liberate vulnerable groups of the society from their current attitude to their own lives as just receivers who rely on others support; and support employment and increase income of the groups." These priorities will be implemented through the annual budgets, in terms of financing, and will be reflected in the Government's medium term budgeting framework (MTBF) and through its Socio-economic Guideline (in terms of specific policy actions to fulfill these priorities and the associated institutional arrangements). Recently, the Cabinet has also issued a resolution to include the MDGs explicitly in the Socio-economic Guidelines, the MTBF, and other sector strategies and is taking measures to provide consistency among them.

This Economic Report aims to inform the ongoing debate on the Government's long term development priorities in Mongolia. It discusses the key facts and potential implications the Government would need to consider when determining its public spending, public investment program, fiscal space, and borrowing strategy going forward. In this context, the objective is to identify reforms where the direct beneficial effect is largest in terms of broad-based employment generation and sustainable growth. To this end, the report will provide suggestions and recommendations that could be considered by the Government when preparing the next Government Action Plan (GAP) and Socio-Economic Guidelines (SEG)—two key Medium term strategic documents that are discussed in the Parliament. The Government is also in the process of finalizing a MDG-based National Development Plan. This report will provide inputs to that exercise as well.

The report begins by reviewing the Mongolian growth experience over the 1990s as a pre-requisite to understand the present endowments, and the circumstances under which one needs to think about the future. Chapter 2 applies the "growth diagnostics" approach to identify those factors that are "binding" constraints to growth and are areas in need of immediate policy interventions by the government. By focusing only on a few key constraints the approach maximizes the chances that the total effect of economic policy interventions (including hard to measure indirect effects) to remove these obstacles will be favorable and large.[3]

The next two chapters of this report are concerned with the policies that are needed to relax the "binding" constraints to growth identified in Chapter 2. This required using sector specific and cross-country knowledge to deduce the specific distortions that lie behind these constraints and finding ways of alleviating them in view of Mongolia's unique characteristics—distance, low population density, natural resource abundance, among others. Chapter 3 discusses the issues that will need to be addressed in order to develop non-mining sector activities with the aim of economic and export diversification and suggests policies to encourage firm "innovation" and private sector growth. Specific policy measures are proposed that would have a significant impact towards fostering

[3] This approach was postulated by Ricardo Hausmann, Dani Rodrik and Andres Velasco (2005).

sustained and broad-based growth (especially in the non-mineral-based sectors of the economy). Chapter 4 discusses policies to relax infrastructure bottlenecks in the context of regional development and Mongolia's unique geography.

The next two chapters discuss policies that should ensure sustainable, high long-term growth. Specifically, Chapter 5 presents a menu of policies tailored to address the mismatch of skills workers bring to the market and those demanded by the market. Given that the mining and livestock sectors will remain central to the Mongolian economy for the foreseeable future, Chapter 6 discusses issues related to appropriate management and development of its mineral wealth, as well as those arising from present practices in the livestock sector and others related to rapid urbanization in Ulaanbaatar. The chapter also examines the environmental consequences of present practices in the livestock and mining sectors. Finally, in Chapter 7, the possibilities of governance failure, policy and other risks are analyzed to demonstrate their inhibiting effects on the achievement of much higher long-term growth rates in this natural resource dependant economy during a commodity price boom. One concludes that good macroeconomic management will be essential for maintaining high, sustainable growth which is essential to reduce poverty and achieve the Millennium Development Goals, as targeted in Mongolia's draft National Development Strategy (NDS). This will require making realistic assumptions on prices of minerals, avoiding unsustainable and untargeted social transfers and unproductive investments, prioritizing infrastructure investments given resource constraints, continued reforms that reduce vulnerability to external shocks, and improving transparency and governance of public administration.

1. LOOKING BACK TO GAUGE THE FUTURE

Mongolia has managed the transition from a planned economy to a market economy quite well relative to most other countries in similar circumstances. In a space of 15 short years it has made much progress in undertaking fundamental economic reforms centered on price liberalization, privatization and the establishment of market institutions. These efforts are reflected in the growth performance of the Mongolian economy over the period and the accompanying structural changes in the economy. Concurrently, progress has been made towards reducing the incidence of poverty. But some of the very developments that have shaped recent economic conditions and history are likely to become constraints to Mongolia's continued prosperity and maintenance of high growth rates.

1.1 Mongolia commenced the transition from a planned economy to a market-based economy in 1990. Today, it is facing a number of challenges borne by its geography and its history. It is a large landlocked country with a land area of some 1.5 million sq. km with a relatively small population. Consequently it has the distinction of being the least densely populated country in the world, with 1.7 persons per sq. km, compared to 137 and 8.5 for neighboring China and Russia, respectively. Climatic conditions are severe with mean average temperatures ranging from -40C to +40^{o}C during the short summer season. Other

Table 1.1: Selected Indicators, Mongolia and some Comparators, 2005

	GNI per capita	**----------Population ----------**			**Literacy Rate**/a	**Land Area**
	(US$)	in millions	growth rate-%	% in largest city	(%)	(million km^2)
Azerbaijan	1,240	8.4	1.0	43.7	98.8	0.1
Cambodia	380	14.1	2.0	..	73.6	0.2
Ghana	450	22.1	2.0	19.2	57.9	0.2
Kazakhstan	2,930	15.1	0.9	13.0	99.5	2.7
Kyrgyz Republic	440	5.2	1.2	47.6	98.7	0.2
Mongolia	690	2.6	1.6	37.6	97.8	1.6
Uruguay	4,360	3.5	0.7	42.0	96.5	0.2
Uzbekistan	510	26.6	1.5	22.3	98.7	0.4
Vietnam	620	83.0	1.0	22.7	90.3	0.3
Memo:						
East Asia and Pacific	1,627	1,885.3	0.8	7.4	90.7	15.9
Low Income	580	2,353.0	1.8	17.1	61.5	28.2

Note: a/ latest available year, in most cases 2004.
Source: World Development Indicators database, World Bank and Bank staff estimates.

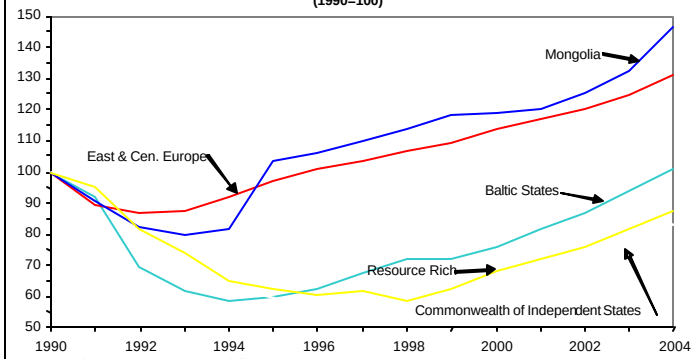
facets of the country's endowments have been positive—namely a well educated populace as reflected in a 98 percent literacy rate, a strong sense of cohesion and well developed social capital due to a near absence of ethno-linguistic variation, a vibrant political democracy and a wealth of largely untapped mineral deposits. These factors have shaped its economic development, particularly since the early 1990s.

1.2 Gross National Income (GNI) per person in 2005 was at US$690 having roughly doubled since 1995 when it was US$330. This places Mongolia in the group of countries classified as low income. Other countries of similar income level include Vietnam, and Uzbekistan (Table 1.1). With more than half its population estimated to be living in Ulaanbataar, the capital city, Mongolia is also one of East Asia's most urbanized countries.

OUTPUT, GROWTH AND EMPLOYMENT

1.3 *Among transition economies, Mongolia has performed well.* Following the withdrawal of transfers from the Former Soviet Union (FSU), Mongolia like most planned economies suffered a "transformational recession" during 1990-93 that led to a cumulative decline in real output of some 20 percent. Since then, despite a number of crises and setbacks, when viewed against the performance of other transition economies in terms of real GDP (with 1990 as the base year), Mongolia has outperformed most (Figure 1.1).[1] Specifically, when compared to individual transition economies, Mongolia has outperformed all such countries except for Poland during the 1990-2004 period, including Albania, the Czech Republic, Hungary, the Slovak Republic and Slovakia.

Figure 1.1: Real GDP--Mongolia and Other Transition Economies, 1990-2004
(1990=100)



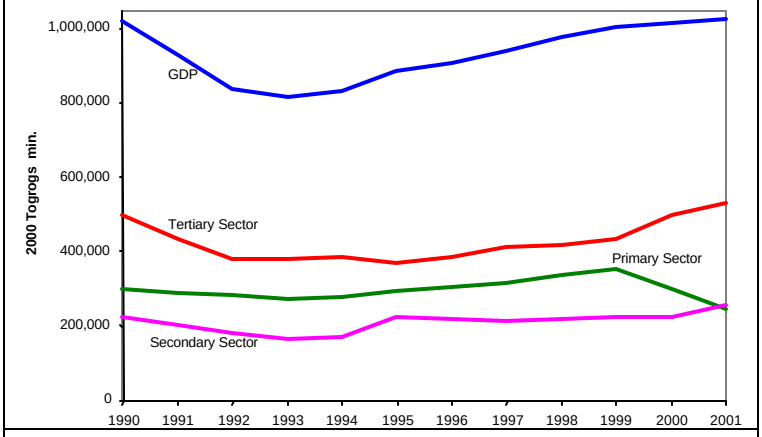
Note: Based on constant 2000 U.S. dollars.
Source: WDI Database, World Bank.

1.4 The transformational recess-ion in Mongolia was also shorter than in most other transitional economies. This has been attributed to a number of factors. First and foremost among transitional economies, Mongolia was relatively less industrialized than its peers, with a majority of its population engaged in traditional activities (mainly animal husbandry and agriculture). To some extent this may have also provided a certain degree of natural social protection, thereby lowering the call on fiscal resources associated with state-sector restructurings that were seen elsewhere. Other factors which mitigated the size and duration of the transformational recession are believed to be the early adoption of structural reforms and market-based institutions. For example, Mongolia moved swiftly to establish an open trade policy and a freely floating exchange rate regime. While Mongolia has also suffered

[1] The country groupings utilized in Figure 1.1, comprised: (a) Baltic States—Estonia, Latvia, and Lithuania; (b) Commonwealth of Independent States—Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Ukraine and Uzbekistan; (c) East and Central Europe—Bulgaria, Czech Republic, Poland, Slovak Republic, and; (d) Resource Rich—Azerbaijan, Kazakhstan, Russian Federation and Ukraine.

bouts of inaction on reforms and attendant crises, it is noteworthy that there has been relatively little reform reversal. Finally, in Mongolia the transition to a market economy was not hindered by widespread social and political unrest as was seen in so many Eastern European countries. By 2001, Mongolia's real GDP had recovered to the level enjoyed at the onset of its transition process (Figure 1.2) but due to the population increase during this period, the end result was a 15 percent lower real GDP per capita.

Figure 1.2: It took a decade for real GDP to recover



Source: National Statistical Office of Mongolia.

1.5 *The GDP growth that occurred in the first decade since 1993 was driven by the primary sector but severe weather thereafter blocked the growth path.* Between the years 1994-99, livestock husbandry and agriculture output was expanding at an average rate of 4.4 percent annually. This was due in large part to the "efficiency dividend" associated with liberalization of state farms and collectives, and the emergence of private ownership in this sector. Fortuitously, farm sector reforms that were introduced prior to 1990 were also beginning to bear fruit around this time and they complemented the market reforms that were being undertaken in the primary sector.[2] These early reforms included increased autonomy in farm management, improved education, and provision of incentives. But, the years 2000 and 2001 saw devastating winter dzuds and withering summer droughts which, in turn, led to a staggering collapse in this sector's output by nearly one-third. The brunt of this was borne by the livestock sub-sector as some 7.5 million animals perished leaving the national livestock herd severely depleted. Another similar, but less severe, dzud occurred in 2002 as well leading to further contraction of the primary sector of the economy.

1.6 *The performance of the secondary (or industrial) sector—which includes mining, manufacturing, and construction and utilities—was more mixed during the early years of the transition as it bore the brunt of adjustment.* The sector experienced annual losses in real output averaging 10 percent during 1990-93. Since then, there has been a gradual recovery but the improvements have not been consistent. Enterprise restructuring in the manufacturing sector led to real declines averaging 14 percent in each of the years 1996 and 1997. Later, in 1999-2000, manufacturing output declined again, primarily as a result of the end of garment import quotas associated with the U.S. Multi Fiber Arrangement which saw Mongolia quickly lose this sub-sector almost in its entirety. Meanwhile, mining activities were taking off. Despite being a small minerals producer sensitive to global commodity market demand

[2] Detailed farm level analysis of Mongolian agriculture shows Total Factor Productivity (TFP) growth turning positive and significant in the second half of the 1980s and attributes this to the new policies and reforms. See Bayarsaihan (2003) for details.

conditions and prices, after an initial output collapse in 1991, the copper-dominated mining sector in Mongolia grew at a healthy rate of 5.6 percent during 1996-2001.[3] The construction and utilities sub-sector has mirrored the overall trends in the rest of the economy during this period.

1.7 *Mongolia's tertiary sector output has moved in line with trends in government spending.* Real output of the tertiary or services sector collapsed during 1990-93, suffering a cumulative decline of nearly one-quarter over the period. In large part this was the result of the severe contraction in government spending that was necessitated due to the withdrawal of transfers from the FSU. Another major contraction in the sector occurred in 1996 arising from the fiscal adjustment effort necessitated that year to free up public resources to recapitalize the banking sector. Thereafter, the tertiary sector continued to expand (in excess of 6 percent per annum, on average) until 2001. This improvement was fueled in part by increased government spending on education and health as well as the fiscal stimulus arising from the banking crisis of 1997.

1.8 *The twenty first century has seen economic performance improve significantly*[4]. Sectoral developments have been much more favorable for Mongolia during the second decade of its transition to a market based economy and much progress has been made. Agricultural performance improved sharply, underpinned by a sustained recovery in the livestock sector—following the devastating dzud of 2002—which saw the national herd increase to over 30 million head in 2005, approaching the levels existing before the crisis. Agricultural sector output has expanded at an average rate of nearly 10 percent a year during 2002-05.

1.9 Overall, the secondary sector has also performed relatively well during the recent period, averaging real increases of 7.7 percent a year during 2001-04 before contracting by 0.9 percent in 2005. Much of this overall positive performance has been due to the rapidly expanding mining sector which posted increases of 34.3 percent and 11.3 percent, respectively, during 2001-04 and 2005. The increase in mining value added is a result both of new activities and projects coming on stream as well as the recent run up in global commodity prices. The manufacturing sub sector expanded at an annual rate averaging 8 percent during 2001-04 this growth coming from a number of areas including food and non-food production. In 2005, however, the sector contracted by 1 percent, mostly due to a collapse in the production of textiles and garments. This was due to closure of a number of garment facilities, mostly foreign owned, that was prompted by the removal of quotas on Chinese exports of textiles and apparel to the US and EU.

1.10 *The big story in the turnaround in Mongolia concerns the tertiary or services sector*. This is the largest sector of the economy and has been the most consistent performer over the past five years, averaging 8 percent annual growth during 2001-04 and 9.1 percent in 2005.

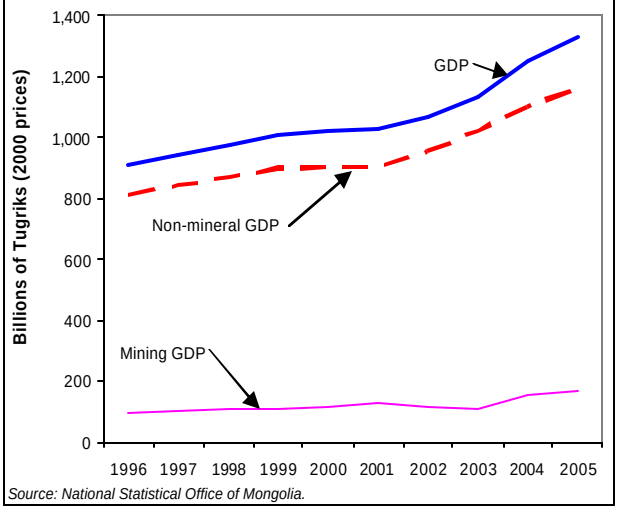
[3] The national accounts data preclude isolation of mining sector value-added before 1995, although industrial production data is available for earlier periods.

[4] Measurement issues in the estimation of sectoral value-added have understated the value of GDP historically. The National Statistical Office of Mongolia commenced work in 2006 to rectify the situation. As a consequence of this exercise historical estimates of GDP are expected to be revised upwards.

This good performance has been driven in the recent past by growth across the spectrum, but especially in retail and wholesale trade, transport, communications and financial services.

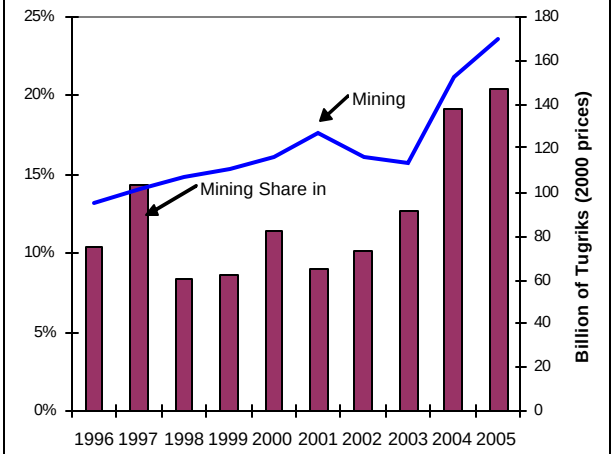
1.11 *Mining sector value added as a share of GDP has only recently started to grow and future prospects are bright.* The recent boom in global prices for copper and gold, Mongolia's two main mineral exports, has fueled considerable public debate about the role of the mining sector as the engine of the country's future growth. This aspect will be discussed in more detail in Chapter 5. However, looking at the available historical data, two factors need to be kept in mind. First, that mining has tended to develop as an enclave activity nearly everywhere in the world and it has been quite challenging to build backward linkages to other sectors in the relevant economies in order to promote economic development and employment. Aside from obvious multiplier effects of mining related spending in the economy and some spin-off activities from mining, the present effect of the sector on the economy is quite minimal simply because it has, until now, been a very small part of the economy. In 2005, mining accounted for 25 percent of GDP, 71 percent of Mongolia's exports and 13 percent of government revenue. The situation will, of course, change further in the near future as the newly discovered deposits come on stream. Figures 1.3 and 1.4 suggest that despite the apparent near doubling of the share of mining activity in GDP between 2001 and 2005, when one examines the same ratio at constant prices, the effect is much less pronounced—mining has only increased its share in GDP by two percentage points over the decade. This serves to underscore that the recent expansion of the sector has primarily emanated from the price effect.

Figure 1.3: GDP Performance, 1996-05



Source: National Statistical Office of Mongolia.

Figure 1.4: Mining Sector Performance, 1996-05

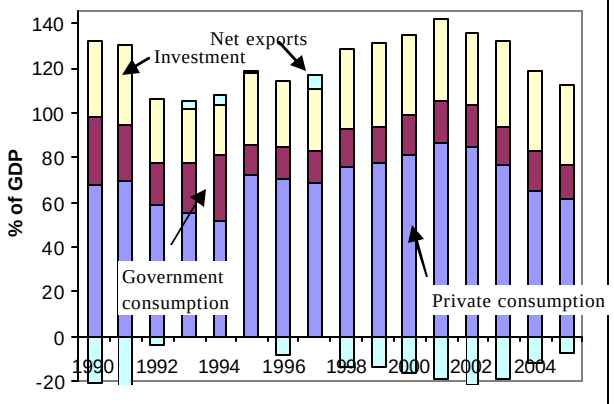


Source: National Statistical Office of Mongolia.

1.12 *Developments in aggregate demand have favored consumption.* Following a reduction in overall demand during the period of 1990-94, the structure of demand shows an increasing trend punctuated by rising private consumption and very modest increases in investment, while public consumption has been quite constant following some compression in 1995-96 (Figure 1.5(a)). Thereafter, increasing levels of real private consumption have been the key drivers of GDP growth (Figure 1.5(b)). It appears that increasing private consumption has

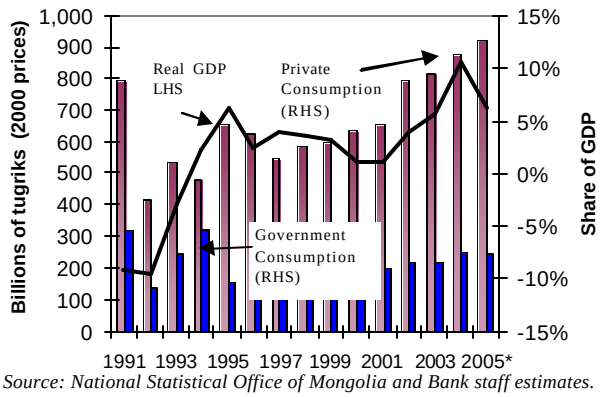
been the key ingredient to maintaining growth and income levels since the start of the transition. Measured against the unfavorable alternative of poorly selected investments which could have reduced longer term growth, this can be considered a fortuitous outcome.

Figure 1.5(a): The structure of demand has favored private consumption....



Source: National Statistical Office of Mongolia and Bank staff estimates.

Figure 1.5(b):…. which has led GDP growth



Source: National Statistical Office of Mongolia and Bank staff estimates.

1.13 Employment collapsed in the aftermath of the withdrawal of direct financial support from the FSU in 1990 and the unemployment rate spiked at a reported 9 percent in 1993, thereafter remaining around 7 percent until after the banking crisis in 1997. This reflected the depressed labor market conditions well. Given that unemployment benefits are minimal and only last for a few months, there is little incentive to register as "unemployed". Thus, it is well accepted that, at least until 1997, official figures grossly understated the unemployment rate. In 1997, it was believed to be some three times higher than the figures contained in official statistics.[5] Some evidence of this existence of the discouraged labor (disguised unemployment) can be deduced using the official data. Although, unemployment is recorded to be falling quite rapidly, especially after 1997, employment numbers are on the rise but not commensurately. That is largely explained by labor force participation rates which have fallen steadily through out the period (Figure 1.6(a)-(c)).

1.14 Consistent with such a view, that "hidden" unemployment is on the rise, the employment and labor force data also show an increase in the number of persons of working age who are neither employed nor registered as unemployed. This figure nearly doubled between 1992 and 2005 (when it stood at 566,000 persons). Undoubtedly, the public sector restructurings and privatization programs, that saw some 47 large enterprises and over 400 small enterprises and assets privatized between 1999 and 2004, contributed to the pressure on labor markets.

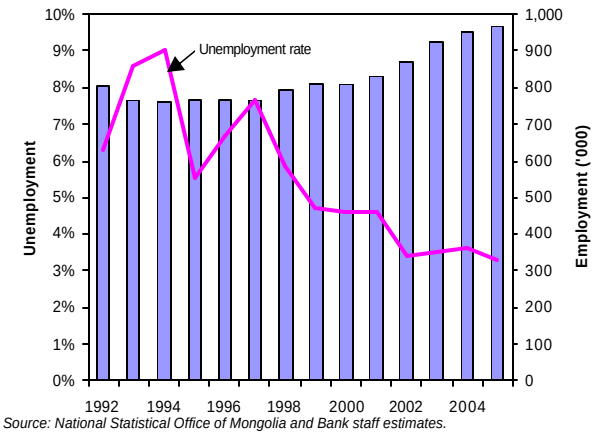
1.15 *Underemployment* is also significant, particularly in rural areas and for workers "employed" in the livestock sector. The livestock sector officially accounts for 40 percent of Mongolia's total workforce (although), and the official unemployment rate in rural areas is only 4.2 percent. These figures, however, may mask the true extent of rural under-employment. The agricultural sector only accounts for 22 percent of GDP and at $888 per

[5] World Bank, 1997.

year (World Bank 2006i) the value added per agricultural worker is low by international comparisons and suggests that many officially listed as agricultural workers may in fact be only working part-time in the sector. To some extent, this may be explained by the rise of informal employment opportunities in rural areas, such as "ninja" mining, though even with this, it is likely that underemployment is a significant rural phenomenon.

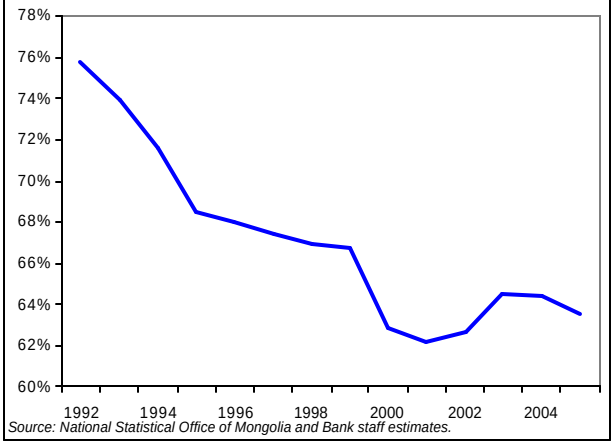
1.16 The significant increase in hidden unemployment noted above, has given rise to a large and growing informal sector: those who are discouraged from finding formal employment in exchange for a wage or salary, have increasingly turned to household or other activities to earn cash. At the national level following a surge in 1991, household income from informal sources and a concurrent rise in the share from household or other activities, suggesting a fundamental structural change in that sector of the economy as a result of the transition to a market led economy (Figure 1.6(a) and 1.6(b)).

Figure 1.6(a): Unemployment has fallen faster than employment growth...



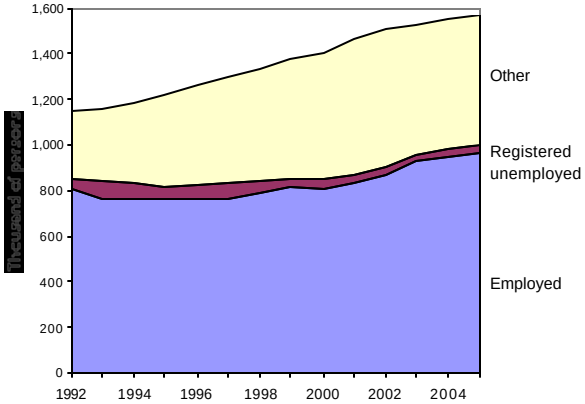
Source: National Statistical Office of Mongolia and Bank staff estimates.

Figure 1.6(b):...while labor force participation rates have declined



Source: National Statistical Office of Mongolia and Bank staff estimates.

Figure 1.6 (c):...suggesting that hidden unemployment may be on the rise



Source: National Statistical Office of Mongolia and Bank staff estimates.

1.17 Mongolia's existing human capital is being underutilized. Using international definitions of employment, data from the LSMS 2002-03 shows that while unemployment remains a problem (particularly among youth), the main group of working-age people without jobs are those who are not looking for a job and not in school (i.e., idle), suggest that it is the working age individuals who are idle and are not looking for a job. Interestingly, those who are working are indeed working long hours (48 hrs per week on average).

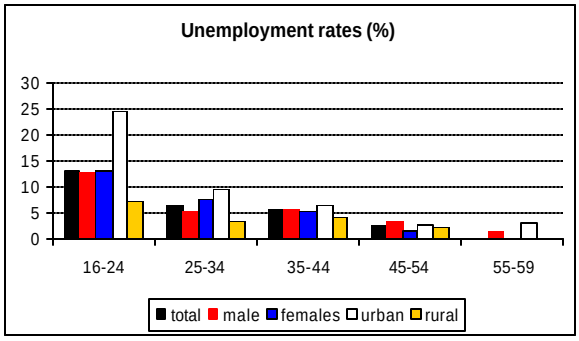
Table 1.2: Employment Status of Working Age Population by Location and Gender (%), 2002

	Urban			Rural			National		
	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**
Labor force	56.5	54.6	**55.5**	76.9	70.6	**73.8**	65.4	61.3	**63.3**
Of which unemployed	9.5	8.8	**9.2**	3.9	4.8	**4.3**	6.6	6.9	**6.7**
Of which employed	51.2	49.8	**50.5**	74.0	67.4	**70.7**	61.2	57.1	**59.1**
Of which employee	69.8	72.5	**71.2**	19.6	21.9	**20.7**	43.1	47.7	**45.4**
Of which self employed	30.2	27.5	**28.8**	80.4	78.1	**79.3**	56.9	52.3	**54.7**
Idle	25.3	26.3	**25.8**	12.9	15.5	**14.2**	19.8	21.9	**20.8**

Notes: Working age population is by Mongolian definition: 16-59 for men, 16-54 for women Self employment includes unpaid family labor. Source: LSMS 2002, based on the employment status in the 7 days prior to the survey interview.

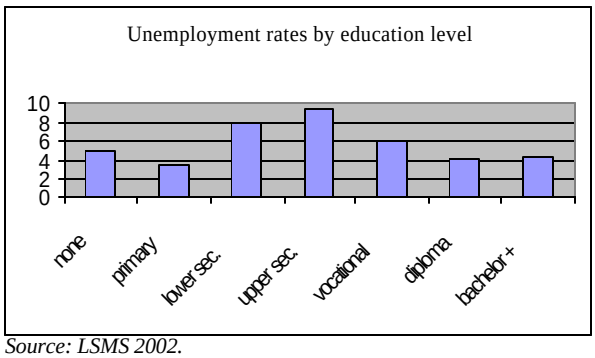
1.18 *Unemployment mainly affects young people.* One also finds that those young people with secondary education who are currently unemployed are mainly living in urban areas. Overall, about 7 percent of the labor force is unemployed, which is not high by international standards (Figure 1.7 and 1.8). The unemployment rate among the 16- to 24-year-olds is 13 percent, accounting for 40 percent of the unemployed, and the ratio of youth to adult unemployment is 2.6. Unemployment rates, however, do fall quite dramatically at later ages. Unemployment is significantly higher in urban areas (9 percent) than in rural areas (4.2 percent). Unemployment affects mainly those workers with secondary education (9.3 percent of upper secondary graduates)—but vocational graduates don't do well either (6 percent).

Figure 1.7: Unemployment is higher among the youth…



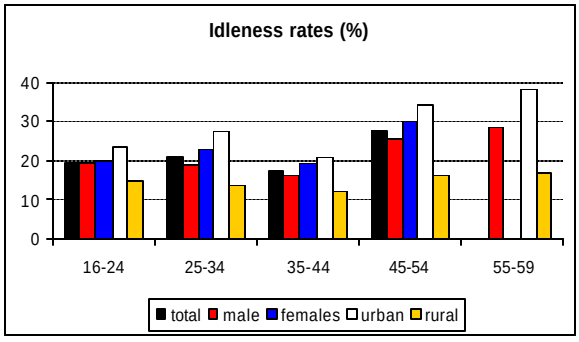
Source: LSMS 2002.

Figure 1.8: …but higher education does not mean employability within Mongolia



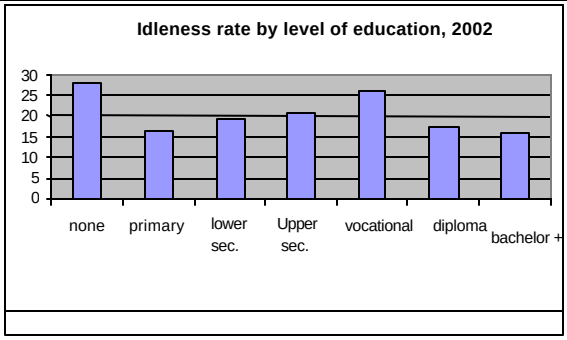
Source: LSMS 2002.

Figure 1.9: Most of the idle workers are of working age…



Source: LSMS 2002.

Figure 1.10:...and those with no education



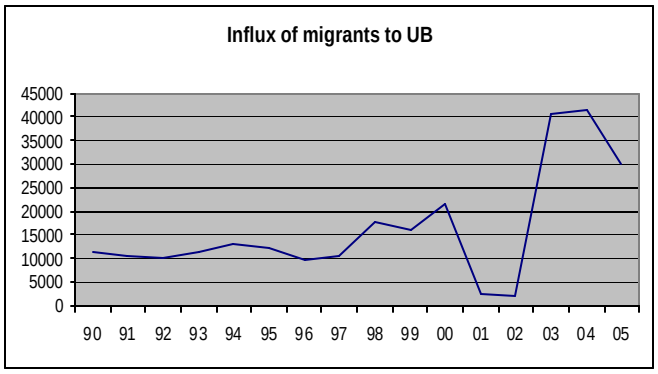
Source: LSMS, 2002.

1.19 The distinctive feature of the Mongolian labor market, from the human resource side, is the high idleness rate, which mainly reflects "discouraged workers". About 21 percent of the working age population is not working, not looking for a job and not in school (Figure 1.9). This mainly reflects discouraged employment rather than engagement in domestic duties, as males and females have similar idleness rates (20 percent and 22 percent, respectively). In fact, Figure 1.10 shows that idle-workers are not a rural phenomenon (idleness rates are even higher in urban areas, 26 percent, versus 14 percent in rural areas). Nor is it a temporary problem of youth since idleness rates remain high throughout working life and peak just before retirement age. Idleness rates are particularly high among workers with no education (28 percent) and vocational education graduates (26 percent).

1.20 *Another distinctive feature, even in the Government, is the extensive use of temporary employment contracts in the labor market.* These contracts are used in response to the high social security taxes employers have to pay for permanent workers. Hence, underreporting of labor costs is also widespread to avoid the burden of high social security taxes. In addition, temporary contracts are not regulated by the Labor Law and so temporary workers do not enjoy the protection and benefits, including social security benefits that permanent workers do. There are no reliable figures on contract workers, but according to administrative data only 20 percent of workers have permanent contracts (the other 80 percent includes self-employed, contract workers, subcontracted workers and workers without contract).

1.21 *These temporary contracts are creating an increasingly segmented urban labor market*, with a small and shrinking segment of permanent workers with good levels of protection and benefits, and a large and increasing sector of workers with temporary contracts (or no contract at all) with little protection. This process has also been facilitated by the influx of rural migrants into Ulaanbaatar (Figure 1.11), as they usually take the least protected and lowest benefit jobs. Thus, migrant workers are a particularly vulnerable segment of the urban labor market. Of course, temporary contracts should be part of the system, but their use should be more regulated to ensure that these temporary workers are granted more protections and be integrated in the country's social security system. Social security taxes need to be rationalized to reduce the incentive of firms to evade these taxes by resorting to issuing temporary employment contracts.

Figure 1.11: Rapid Increase in Migration to UB in Response to Dzuds.



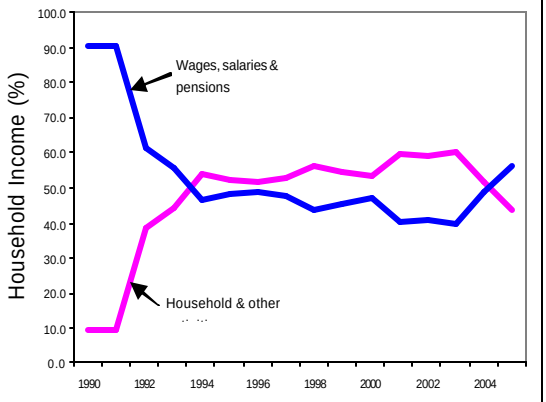
Source: Mongolia Statistical Yearbook. Various issues.

1.22 In spite of the difficult labor market conditions the economy has generated on average about 20,000 new jobs a year since 1994, mostly in the private sector. As a result, by 2005 the private sector accounted for three-quarters of total employment in the country. While this performance falls far short of the increase in the labor force, which added approximately 10-12,000 persons each year the challenge for the future will be ever more difficult as the

labor force is expected to increase by 250,000 new entrants over the next decade. The majority of the new jobs created since 1994, numbering over 126,000 have been in services in the Tertiary sector while nearly 50,000 new jobs were created in Agriculture with the balance in the Secondary sector. Within the latter, it is worth noting that of late, the manufacturing sub-sector has suffered a net decline of nearly 18,000 jobs over the period, reflecting the results of enterprise restructuring, as well as, the impact of the expiry of the US MFA in the textile and garment industry.

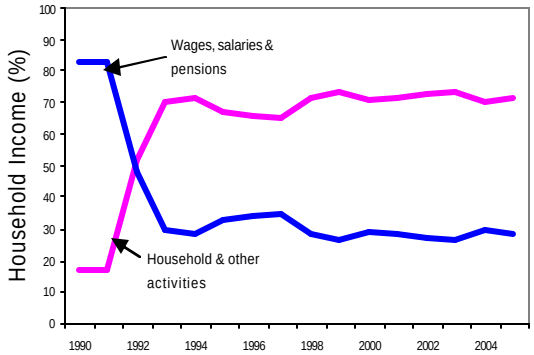
1.23 The demand for skilled and educated workers is rising in Mongolia. The skills that are in increasing demand include jobs that require critical and creative thinking, good communication skills, leadership, teamwork, practical and technical knowledge (e.g., in Information Technology) and English language skills. This rising demand, however, is unmet by available supply of potential workers, including the younger workers, in part due to the current education and training systems in the country.

Figure 1.12(a): Overall, household income from informal activities appears to be declining…



Source: National Statistical Office of Mongolia.

Figure 1.12(b): …but for rural households that is not the case, suggesting a large informal sector



Source: National Statistical Office of Mongolia.

1.24 The recent *Investment Climate Assessment* (ICA) (World Bank, 2006) finds that although the Mongolian economy has grown significantly since 2002 (with an unprecedented GDP growth rate of 10.6 percent in 2004, the highest in the East Asia at the time), this has not generated commensurate increases in employment in the Mongolian private sector. The sectors that have grown the most in terms of GDP share, particularly mining, have been relatively capital-intensive, as indicated by changes in sectoral employment shares (Table 1.3). Also the growth in job opportunities has been confined to urban areas, mainly UB, and has been fueled by large migration flows from rural areas. In fact, less than half of the firms surveyed in the ICS who were operating by 2001 had added any jobs over the period 2001-2004 (Table 1.4). Micro-enterprises tended to create jobs at the time of start-up. Small and medium enterprises (SMEs) appear to be the locus of job creation—nearly 60 percent of SMEs added jobs. Entrepreneurs only accounted for 1.6 percent of the labor force.

Table 1.3: Sector-wise Contributions to GDP and Employment Growth

		Share of Employment (%)			Share of GDP (%)		
				Change			Change
		2001	2004	2001-04	2001	2004	2001-04
Agriculture, livestock, forestry and fishing		48.3	40.2	-8.2	24.9	21.3	-3.5
Industry	Mining and quarrying	2.4	3.5	1.1	9.0	17.3	8.3
	Construction	2.5	4.1	1.7	2.0	2.6	0.6
	Manufacturing	6.7	6.0	-0.7	8.1	5.3	-2.7
Services	Wholesale and retail trade	10.8	14.1	3.2	26.7	24.6	-2.1
	Hospitality	2.0	3.0	1.0	1.3	1.0	-0.3
	Transport	4.2	4.4	0.2	13.0	12.7	-0.3
	Financial, real estate and business	1.7	2.9	1.2	4.2	5.3	1.1
Others (utilities, social, public)		21.4	21.8	0.4	10.9	9.8	-1.1

Source: National Statistical Office of Mongolia (2005), Mongolia Statistical Yearbook.

Table 1.4: Have Mongolian Firms Been Creating Jobs?

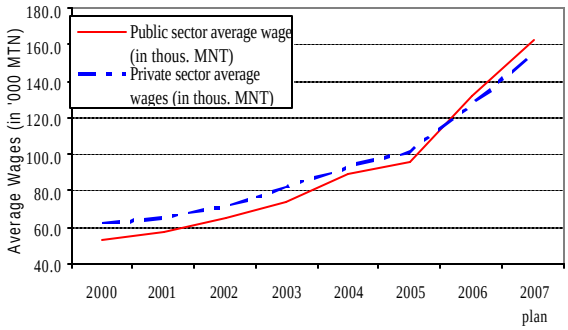
	Fraction (%) of firms which:				
	Shed jobs	No change	Added jobs	Created jobs through entry	Share of all firms (%)
All firms	17.8	27.1	40.4	14.7	100.0
By industry cluster					
Construction	12.3	31.7	42.8	13.2	25.7
Apparel and textiles	25.9	26.4	43.5	4.2	15.5
Food and beverage products	22.6	18.2	38.5	20.7	21.6
Wood products	8.8	19.2	43.1	28.9	6.9
Hides and leather products	24.6	34.9	40.5	0.0	5.6
Business services	19.9	31.2	36.4	12.5	18.6
Tourism	16.1	20.0	36.7	27.2	6.1
By initial firm size (# of permanent workers)					
Microenterprises (< 10)	7.4	32.9	25.6	34.1	43.0
Small and medium (10-99)	21.4	21.7	57.0	0.0	41.4
Large (>= 100)	37.3	25.5	37.2	0.0	15.6
By ownership status					
Domestic private	16.4	28.5	39.1	16.0	84.1
Foreign	11.0	18.6	59.1	11.3	10.1
Public-sector	49.9	21.8	27.0	1.3	5.8

Source: Mongolia Productivity and Investment Climate Survey, 2004

1.25 *Public sector wages now exceed private sector wages in Mongolia.* Wage growth in recent years has been robust. Available data indicate that real wages in the public sector have risen at an average annual rate of nearly 9 percent in the five years to 2005, while wage growth across all sectors averaged just under 5 percent over the same period. This is an indication of both slower wage growth in the private sector and of the relatively tight labor market conditions (Figure 1.13(a) and 1.13(b)). As a result average wages in the public sector exceeded average wages across the entire economy for the first time in 2005. The 30 percent wage increase granted the public sector in 2006 is estimated to have widened the gap between

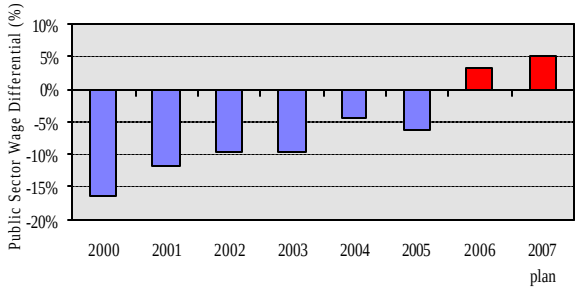
public and private wages further. This will be exacerbated even further by the planned 20 percent increase for 2007 that is contained in the approved 2007 budget.

Figure 1.13 (a): Public sector wages have been rising….



Source: MOF and Bank staff estimates

Figure 1.13 (b): …faster than Private Sector wages



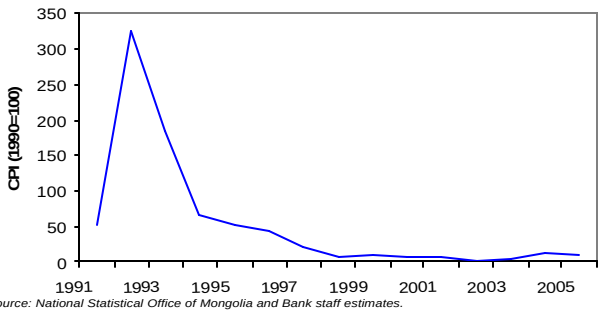
Source: MOF and Bank staff estimates

1.26 International sound practices in civil service reforms suggest that, in general, public sector wage growth should be restrained and based on productivity increases or guided by comparable private sector wages, which are generally more competitively determined. The recent increases in civil service, wages without a civil service census or commensurate civil service reforms, run the risk of undermining labor competitiveness in Mongolia. This, in turn, may be to the detriment of the private sector and its growth prospects. Furthermore, the recent wage increases raise the unwelcome prospect of triggering higher inflation. While the real wage index for the economy showed a cumulative increase of 20 percent over the period 2001-05, some sectors were clearly more dispersed. For example, financial intermediation services experienced the largest increase, amounting to 114 percent over the period while the hotel and restaurant sub-sector experienced a 27 percent real increase. Meanwhile, real wages in agriculture were down 19 percent, probably reflecting the residual effects of the severe weather of 2000-02, while those employed in real estate and rental industries on average earned 10 percent less during the period 2001-05.

Fiscal and Monetary Developments

1.27 *Inflation pressures remain persistent*. The collapse in output during 1990-92 was accompanied by a large increase in inflation which spiked at over 300 percent in 1992. This first bout of inflation was fueled by the price deregulation reforms of early 1991. Subsequently, thanks to monetary restraint during 1993-94 inflation was on a declining trend but remained persistently around 50 percent during 1994-96, partly because of ongoing adjustments in relative prices, such as the energy price adjustments of late 1996

Figure 1.14: Inflation has been brought under control



Source: National Statistical Office of Mongolia and Bank staff estimates.

(Figure 1.14).[6] Increasingly the causes of inflation became more complex, as did the measures required to contain it. Fiscal pressures emanating from the need to support ailing public enterprises were aggravated in 1996 by the banking crisis: first, because resolution of the crisis required a greater call on budgetary resources; and second the loss of public confidence in the banking system resulted in a large movement out of deposits and into domestic and foreign currency, blunting the effectiveness of monetary policy to control inflation, and placing downward pressure on the togrog which depreciated sharply in late 1996, adding further to inflationary pressure.

1.28 Stabilization was achieved through implementation of a new round of comprehensive reforms commencing in late 1996 and centered on restructuring of the banking system, higher domestic interest rates, tight fiscal policy and included other measures as well. Together these measures succeeded in reducing inflation progressively and for the first time to single digit levels in 1998. Thereafter, inflation was on a declining trend until 2002 when the Consumer Price Index increased by only 1.6 percent. Inflationary pressures re-emerged in mid-2004 as food and fuel prices rose rapidly, and increased again in 2005 due to an expansion in domestic credit growth. These have subsided in 2006 with inflation registering an increase of 3.4 percent between January and June.

1.29 *Fiscal consolidation has relied heavily on foreign grants and loans.* The fiscal situation deteriorated rapidly in 1991-92 with the budget deficit approaching 25 percent of GDP in 1992, under the weight of subsidies, mainly to state owned enterprises. Thereafter, the effects of a concerted adjustment effort were beginning to bear fruit by 1995 when the deficit once again burgeoned in 1996 due to the collapse of copper prices and election related spending pressures. The deterioration continued through 1998 with the fiscal deficit skyrocketing to 13 percent of GDP.

1.30 A recovery in copper prices in 1999 marked a new phase in fiscal consolidation efforts which have been maintained to date. While successive budget deficits have been smaller, these have been the result of strong savings efforts as increasing surpluses have been generated on the current side (Table 1.5). At the same time commensurate improvements have occurred in the primary balance, which for the first time registered a surplus in 2005 and again in 2006. The fiscal consolidation effort has focused on both reducing expenditures and a strong revenue effort but a key ingredient which has facilitated it has been the considerable foreign assistance which has gone towards financing the Government's budget. (Figures 1.15 (a) and (b)). The recent

Table 1.5: Fiscal Indicators, 1997-2006

(percent of GDP)

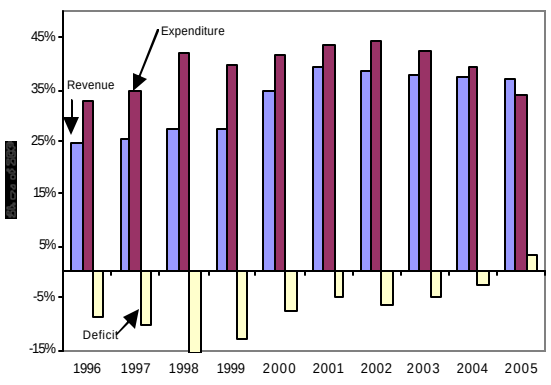
	1997-2000	2001	2002	2003	2004	2005	2006 Est.
Current Balance	1.6	5.7	4.4	7.6	8.8	9.3	12.3
Overall balance	-13.9	-4.5	-5.9	-4.2	-2.1	2.9	5.1
Primary balance	-12.1	-3.1	-4.3	-3.0	-0.9	3.8	5.7

Source: Ministry of Finance and Bank staff estimates.

[6] Estimated to have added 18 percentage points to inflation in 1996.

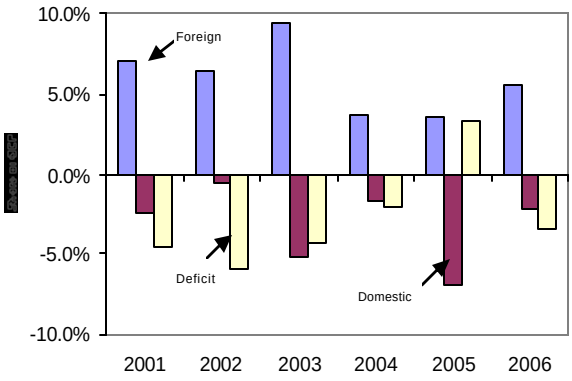
global commodity price boom has also contributed in this regard[7]. The fiscal consolidation efforts can rightly be thought of as the cornerstone of Mongolia's macroeconomic stability.

Figure 1.15 (a): Fiscal Consolidation is evident in expenditure compression and revenue effort...



Source: Ministry of Finance, Mongolia.

Figure 1.15(b): ...and it has all been foreign financed



Source: Ministry of Finance., Mongolia

1.31 Underscoring these trends, budgetary performance in 2005 was exemplary relative to the planned budget at both the aggregate level as well as with respect to key components. Specifically, an overall surplus equivalent to 3 percent of GDP was achieved (compared to a planned deficit of 3.2 percent of GDP) largely on the back of a revenue windfall accruing from higher than expected global copper prices. As a result, corporate income tax receipts were about Tg33.3 billion (or 38 percent) higher than programmed, equivalent to 1.5 percent of GDP. But revenue performance was better than budgeted across the board with nearly all categories of tax revenue exceeding the budget plan—overall tax revenues in 2005 were 4.1 percentage points of GDP higher. On the expenditure side, overall spending came in at about 2 percentage points of GDP lower than the budget plan. Notable about this performance is that the all important category of current expenditure was on target, with spending for wages and salaries being held slightly below the plan and that for goods and services exceeding the plan slightly.

1.32 The track record of meeting, if not exceeding its overall fiscal targets, be it through expenditure compression at the expense of spending on capital operations and maintenance expenditures, suggest that the need to maintain aggregate fiscal discipline through expenditure control appears to be entrenched in the minds of the Government. There is, nonetheless, a need to now turn to improving the quality and efficiency of public spending. This will require in-depth analysis of government spending and should provide an opportunity for benchmarking in various areas, both as a baseline for Mongolia to measure its progress against, as well as, relative to other countries.[8]

[7] Figure 1.15 (b) excludes the settlement of Ruble denominated pre-1990 debt, which was settled in 2003 as that was not relevant to budget financing. The settlement involved a 97.5 percent reduction in the principal amount which was valued at US$11.4 billion. The balance was paid as a residual cash payment which was financed partly from domestic sources and partly from foreign sources.

[8] The forthcoming World Bank *Public Expenditure and Financial Management Review* will aim to address this issue to some extent.

1.33 As expected the combination of a growing economy and relatively stable macroeconomic conditions has led to an improving picture with respect to fiscal sustainability. This is reflected in the trends of all relevant indicators (Table 1.6). After rising sharply through the decade of the 1990s, both the ratio of public debt to GDP and the Net Present Value (NPV) of public debt to GDP have declined since 2000.[9] At the same time the ratio of debt service to revenue has remained stable, reflecting the increasingly concessional nature of new borrowings and strong revenue performance.

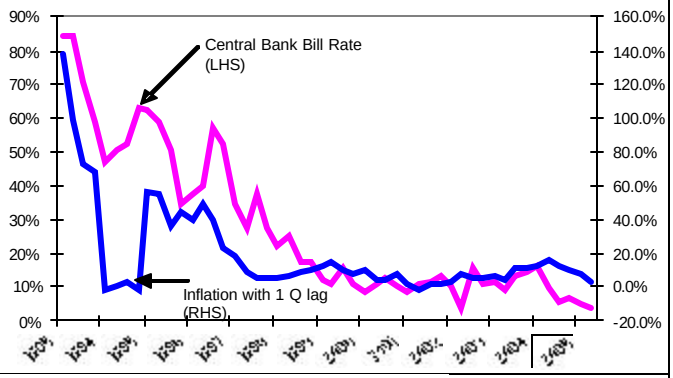
Table 1.6: Fiscal Sustainability Has Been Improving…

(%)	1999-2000	2001	2002	2003	2004	2005	2006/e
Public Debt / GDP	102	89	92	113	93	68	55
NPV Public Debt / GDP	71	63	63	80	60	45	35
Public Debt / Revenue	328	226	239	301	251	203	150
NPV Public Debt/Revenue	228	159	163	212	162	133	94
Debt Service / Revenue	..	6.4	6.4	58.8	7.0	5.3	3.5

Source: Ministry of Finance, IMF and Bank staff estimates.

1.34 *Monetary policy was effective in the 1990s, but was followed by a protracted and costly banking crisis.* The conduct of monetary policy has been dominated by a number of crises especially during the early 1990s. Initially the major priority was to contain the inflationary pressures which had been triggered by the successive rounds of price liberalization that marked the early stages of transition from a planned to a market economy (Figure 1.16). At the same time—and within these parameters—there were pressing demands for credit, mainly from the large government sector which included many ailing state owned enterprises. Thus, managing credit demand and allocating credit was also a challenge for policymakers operating for the first time under market conditions and discipline.

Figure 1.16: Monetary policy has been geared to combating inflation, especially in the 1990s



Source: International Financial Statistics, IMF.

1.35 An appreciation of the institutional context in the banking sector is important to better understand the events of the period. Prior to the 1991 reforms, profit was not a guiding force or motive in the banking industry. Instead, it was considered to be a window for providing directed credit as per the wishes of the State. This was undertaken by the only commercial bank at the time—Mongol Bank—which later evolved into the country's Central Bank following the promulgation of new Central Bank Law and banking sector legislations that were approved by Parliament in 1991. In addition, five new specialized banks were established from the break-up of Mongol Bank—covering retail banking, enterprise finance, rural finance, insurance and trade finance, respectively. Ownership of these banks was a mix

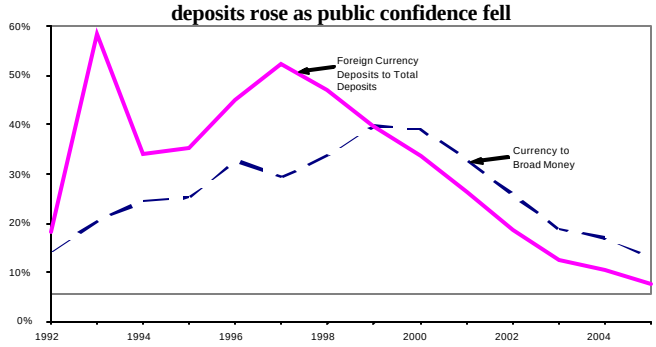
[9] The sharp rise in these indicators in 2003 is on account of inclusion that year, of the Ruble denominated pre-1990 debt, which was extinguished in 2003-04.

between partially private and fully state-owned with the latter being the dominant form. During the next five years eleven new private banks were established.

1.36 The situation became more demanding as a banking crisis unfolded during the 1990s, punctuated by three episodes—in 1994, 1996-97 and 1999. Weak management, poor internal controls and the prevailing macroeconomic environment—characterized by sharply falling output, bouts of high inflation and rapid exchange rate depreciation—resulted in the failure of two relatively small banks in 1994. The Government directed two existing banks to take over the two failed institutions. Without any accompanying fundamental change in the banking sector, or improvements in BOM's technical and supervisory capacity to enforce the recently introduced prudential regulations, it was only a matter of time before the weaknesses in the sector re-emerged.

1.37 In response to the failure of a number of banks in 1996—to meet prudential regulations, reserve requirements and credit ceilings—a second more comprehensive bank restructuring operation was launched. In the course of this effort, most of the failed institutions were recapitalized with only one being closed initially, a small bank. Yet that closure had a profound adverse impact on public confidence in banks and led to financial disintermediation. As the public preferred to hold currency it served to drive money out of deposits, much of which went to foreign currency deposits (Figure 1.17). This in turn placed greater downward pressure on the togrog leading to a revival of inflation and a worsening of the crisis which was resolved through a more comprehensive bank restructuring operation that saw a number of banks closed.

Figure 1.17: Currency holdings and foreign currency deposits rose as public confidence fell



Source: International Financial Statistics, IMF and Bank Staff estimates

1.38 Despite these efforts a number of banks remained in severe distress and large loan losses re-emerged in 1998. This required a further round of closures and consolidation in 1999 which has placed the sector on a sounder footing.[10] Nevertheless, given the depth of the crisis and its protracted nature the recovery of the banking sector took until about 2001. Following the banking crises greater attention has been paid to prudential supervision but improvements are constrained by technical capacity as well as the absence of looming crisis.

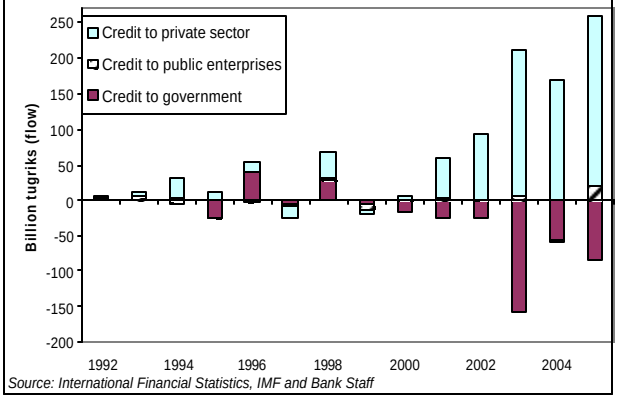
1.39 *Government restraint in terms of credit demand has benefited the private sector.* Following the 1999 restructuring the performance of the banking sector has improved considerably. Most notably credit growth has resumed since about 2001 and remains robust, averaging 58 percent per year during 2001-05 and 32 percent in the year to mid-2006. In this

[10] The restructuring of the banking sector through these episodes has been supported by the international community, mainly the multilateral institutions, through provision of financial and technical assistance.

period the private sector has been the largest source of credit expansion, averaging 60 percent annually during 2001-05 moderating to an annual increase of 47 percent through the first quarter of 2006 and to 44 percent through the September quarter. The pace of credit growth to state owned enterprises has been much slower, almost half that to the private sector while net credit to the government has been declining, thereby facilitating private sector credit expansion. The latter has also been important in terms of containing inflationary pressures.

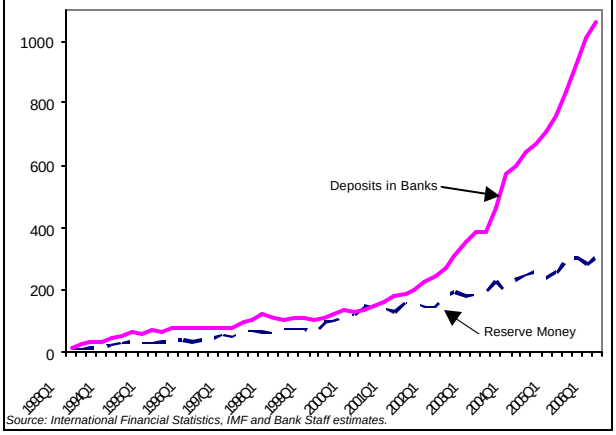
1.40 The (private sector) credit boom now in progress reflects to some extent a return of confidence in the banking sector and the effects of pent up credit demand from the depressed levels experienced during the prior period as well as a healthier more competitive banking sector. The improved overall economic performance and generally prudent macro policies have also facilitated a distinct and parallel shift in credit provision away from the central government, with net credit negative and much less credit directed to state owned enterprises. Thus the private sector has been a big beneficiary of these macro trends. With the restoration of confidence in the banks deposits have grown rapidly, providing the base for the higher lending levels being enjoyed in the current credit boom—all signs of increasing financial intermediation (Figures 1.18(a) and (b)).[11]

Figure 1.18 (a): The private sector credit boom has been accomodated by a shift away from the public sector...



Source: International Financial Statistics, IMF and Bank Staff

Figure 1.18 (b): ...and has been fuelled by soaring deposits in Banks as confidence has returned



Source: International Financial Statistics, IMF and Bank Staff estimates.

1.41 *The banking sector remains fragile and the boom in private sector credit needs to be closely monitored.* The concern about the recent credit boom relates to a number of factors, principal among them the still-fragile state of the sector. The ability of banks to adequately assess credit risk has always been an issue in Mongolia but much more so during periods of rapid credit growth as at present. The predominance of short-term loans—those with maturities of less than one year—in bank lending is another concern as it increases liquidity risk.[12] One indicator which bears scrutiny relates to non-performing loans (NPLs) which are declining following the improvements after resolution of the banking crisis (Table 1.7). With a majority of bank lending short term in maturity, there is a tendency to roll-over NPLs so as to avoid recognizing them when they become non-performing, thereby giving impression that their balance sheet is strong. A final concern relates to the fact that much of the present credit

[11] Adjusted to take account of the settlement of pre-1990 convertible Ruble debt in 2003.
[12] Although undesirable from a macro perspective, this is consistent with bank liabilities.

expansion appears linked to a real estate boom which has been underway for the past few years. Globally the history of credit expansions when they have been linked to real estate booms has not been promising. The bursting of such a real estate bubble has usually led to increased distress and even failure in the relevant financial institutions and been associated with rising NPLs. Mongolia needs to closely monitor the current situation and a significantly increased effort of supervision and implementation of prudent credit policies to ensure that the hard earned gains of the last decade are not lost.

Table 1.7: Recent Trends in Private Sector Credit Indicators

Million Tugrik	1999	2000	2001	2002	2003	2004	2005	2006
Total Outstanding Loans	77,514?	66,757?	135,071?	231,450?	442,148?	606,798?	859,852?	1,223,287?
Credit to Private Sec & Ind.	73,515?	61,379?	125,537?	220,132?	426,501?	594,238?	825,740?	1,187,031?
Non-Performing Loans	39,181?	14,614?	9,068?	11,745?	21,150?	39,118?	49,471?	60,022?
NPL Ratio	50.5%	21.9%	6.7%	5.1%	4.8%	6.4%	5.8%	4.9%
Private Sector Credit/GDP	7.9%	6.0%	11.3%	17.7%	28.8%	30.5%	32.7%	37.4%
NPL/GDP	4.2%	1.4%	0.8%	0.9%	1.4%	2.0%	2.0%	1.9%

Source: BOM

1.42 Through much of the past decade and a half Mongolia has enjoyed consistent and increasing inflows of foreign capital. These have generally been on account of foreign aid, direct foreign investment as well as export earnings (usually associated with a commodity price boom). Management of these flows is an important issue for maintaining the competitiveness of the traded goods sector and avoiding the so-called *Dutch Disease,* which has retarded the economic development prospects of so many countries. (See also Chapter 4.)

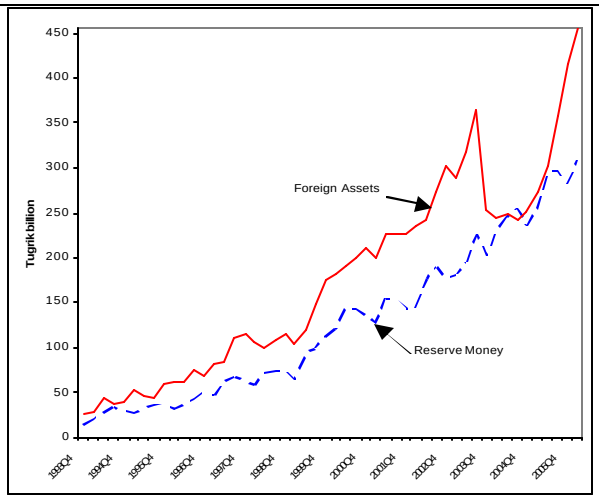
1.43 According to the International Monetary Fund (IMF 2006a), continuing strong foreign exchange inflows have led to an acceleration in reserve money which more-than-offset a substantial decline in net central bank credit to government. Interestingly, inflation has been kept low of late (and thus, the absence of significant *seignorage* revenue) despite an increase in capital inflows due to an ongoing process of reintermediation as incomes have risen and confidence in the banking system has improved and the gradual appreciation of the exchange rate. One is seeing an increasing divergence observed between the growth of foreign assets and reserve money (Figure 1.19). In fact foreign assets have consistently exceeded reserve money (except for a brief period in 2003-04)[13]). Almost the entire increase in broad money in 2006 can be attributed to inflows of foreign assets.[14] Looking to the future Mongolia may have to contend with sharply increased capital inflows associated with its large untapped mineral potential and will need to consider an appropriate policy framework for managing these flows as well as appropriate monetary instruments. Clearly, a relaxation of fiscal policy, excessive wage increases, or a depreciation of the togrog could further add to inflationary

[13] This is due to the one-off payment for settlement of pre-1990 convertible Ruble debt which resulted in a large decline in foreign assets in late 2003/early 2004.

[14] The Reserve Requirement, presently at 14 percent, has been the subject of considerable debate recently as it represents a tax on banks—adversely affecting their profitability and playing a role in maintaining a large spread between real lending and deposit rates.

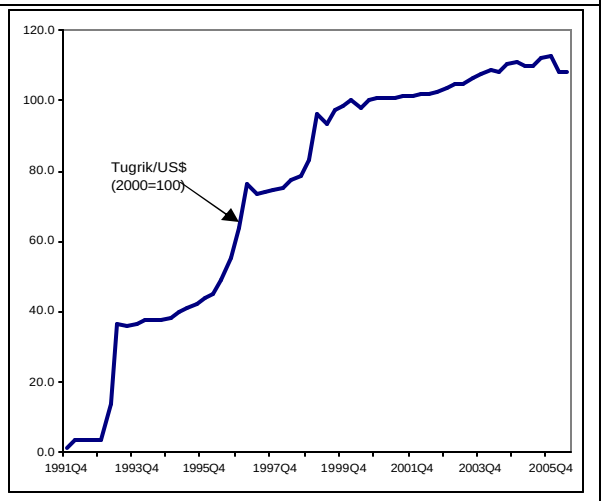
pressures. Institutional strengthening is also needed to improve the effectiveness of monetary policy instruments in Mongolia.[15]

Figure 1.19. To date, capital inflows have been sterilized reducing the impact of "Dutch Disease"



Source: International Financial Statistics, IMF and Bank staff estimates.

Figure 1.20. Following the volatility of the 1990s the real exchange rate has been stable (2000=100)



Source: International Financial Statistics, IMF and Bank staff estimates.

EXTERNAL SECTOR DEVELOPMENTS

1.44 *Despite good performance on the external trade front, Mongolia remains heavily dependent on a few primary commodities.* Although Mongolia was quick to place the Tugrik on a managed float and allow market forces to determine its value, the currency has been subject to much volatility during the 1990s. This instability was in good measure related to liberalization of controlled prices through various rounds, the banking crisis and to the high and persistent inflation. Since that period, the Tugrik has been quite stable relative to the U.S. dollar (and other major currencies), depreciating slightly in nominal terms (Figure 1.20). This, in addition to domestic wage restraint more generally has helped maintain Mongolia's competitiveness. Recent exchange rate developments have reflected the improvements in the terms of trade and capital inflows. The real effective exchange rate (REER) of the togrog has appreciated by about 18 percent since end-2004. In terms of the U.S. dollar, the togrog depreciated by 1/2 percent in 2005 but appreciated by 4½ percent during the first nine months of 2006.

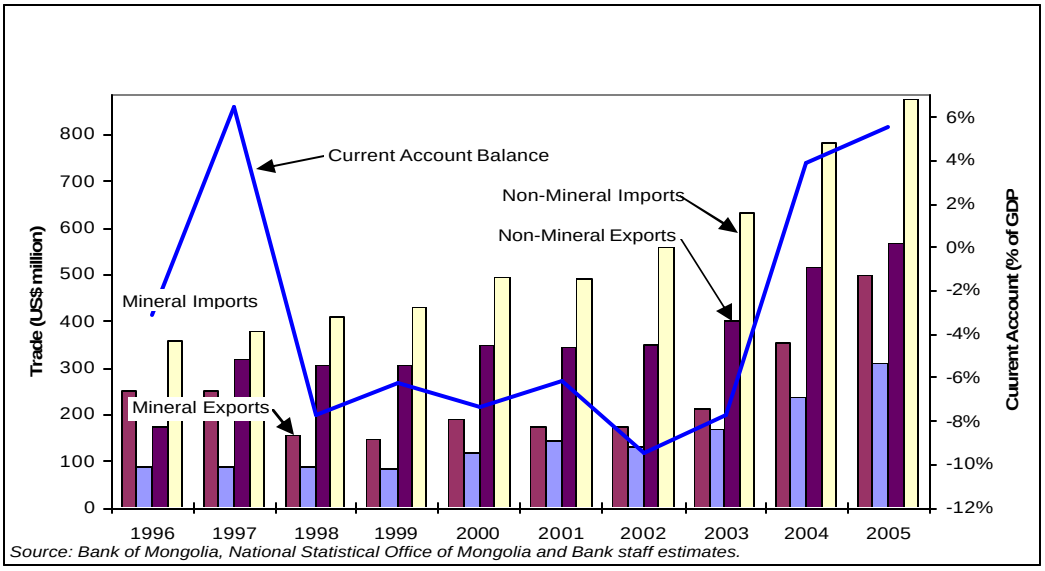
1.45 Mongolia embraced an open trading system early on in its transition to a market-based economy. Import tariffs were removed in 1994. Due to the resulting revenue loss, estimated at the time to be equivalent to 2.5 percent of GDP these were re-imposed almost immediately thereafter, but at very low uniform rates. Mongolia joined the World Trade Organization (WTO) in 1997, the first transition economy outside Europe to do so. Consequently, trade has expanded rapidly as reflected in the trade to GDP ratio which increased from 15 percent in 1990 to 108 percent at the end of the decade and 120 percent at the end of 2005.

[15] The International Monetary Fund is currently providing technical assistance in the regard. (See IMF 2006a).

1.46 In the early 1990s more than half of all exports were accounted for by copper, with the balance being much lesser quantities of agriculture and livestock related products such as hides and wool, minerals and manufactured exports. Such overwhelming dependence on a single commodity for its foreign earnings has been costly for the balance of payments and in economic development terms, when for example in 1996 international copper prices collapsed. The second half of the decade also saw the emergence of two new export products—cashmere garments and gold—which have contributed to diversify Mongolia's limited export basket, even as traditional exports of primary products and manufactures have been declining.

1.47 More recent trends in exports have seen gold exports increase at 25 percent a year over 2001-04, mainly reflecting increased capacity from a new operation. Other mineral exports led by copper have grown at 7 percent a year over the same period while the recently emerged cashmere based garment sector has gone into decline averaging some 12 percent annually. The latter is mainly the result of the end of quotas for Chinese exports of textiles and apparel in the U.S. and the EU, followed by the relocation of key producers to other countries. Despite these developments Mongolia remains an undiversified exporter, dependent on three commodities for some 87 percent of its export earnings in 2006—copper (36 percent), gold (28 percent) and garments (23 percent). These developments point up Mongolia's vulnerability as a relatively undiversified economy. Production problems, price or policy induced shocks could easily send export earnings into a tailspin, destabilize the balance of payments and lead to a broader economic crisis.[16] Newly emerging export commodities which may hold some promise for the future include crude oil and coal.

Figure 1.21: Surpluses on Minerals Trade Have Helped Finance Growing Deficits on Non-mineral Trade



Source: Bank of Mongolia, National Statistical Office of Mongolia and Bank staff estimates.

[16] Gold exports fell sharply in the first three-quarters of 2006—reportedly by six tons—over the Jan-Aug period, compared to the same period in the preceding year, an outcome largely attributed to policy changes.

1.48 Import demand has been strong, outstripping export growth over most of the post 1990 period. This is a reflection of growing domestic incomes, the relatively open trade regime and Mongolia's import needs which cover a diverse array of goods. As a consequence the magnitude of current account deficits has been increasing over time, moderating somewhat after 2002. Nonetheless the current account has been dominated by increasing trade deficits on non-mineral trade and trade surpluses with respect to mineral trade (Figure 1.21).

1.49 *Over the course of time the pattern of major trading partners has shifted significantly for Mongolia*. During the 1990s, China and Russia were the two largest export destinations accounting for some 46 percent of total exports and each having nearly equal shares. Since 2000, China has emerged as the dominant export destination with 47 percent of total exports going to it, while Russia has seen its share slip to 5 percent. The U.S. has by contrast emerged to become an important export destination during 2000-05, second only to China. The picture with respect to imports has been relatively static across the two time periods with the major sources of imports remaining unchanged. Notable trends here are the significant increase in imports from China and nearly offsetting declines in imports from Russia and Japan. Import and export shares of the seven largest trading partners have not changed much between the 1990s and the present time (Table 1.8 and Table 1.9).

Table 1.8: Exports to China Have Nearly Doubled and Traditional Destinations Have Changed

(% of exports)	1992-99		2000-05
China	24%	China	47%
Russian Fed.	22%	USA	22%
Switzerland	16%	Canada	3%
USA	6%	U.K.	7%
Japan	6%	South Korea	3%
Kazakhstan	6%	Russian Fed.	5%
U.K	5%	Italy	2%
Total	85%	Total	90%

Source: National Statistical Office of Mongolia.

Table 1.9: Import Partners Have not Changed but China is Becoming More Dominant

(% of imports)	1992-99		2000-05
Russian Fed.	41%	Russian Fed.	34%
China	14%	China	24%
Japan	12%	Japan	8%
South Korea	5%	South Korea	8%
USA	5%	Kazakhstan	2%
Germany	4%	USA	4%
Singapore	2%	Germany	4%
Total	83%	Total	84%

Source: National Statistical Office of Mongolia.

1.50 *Remittances and foreign direct investment have increased significantly in recent years and making a positive contribution to the growth process.* Remittance income from Mongolians living abroad has increased astronomically from less than US$10 million annually in the late 1990s to nearly US$200 million in 2004 and US$174 million in 2005, equivalent to 10 percent and 9 percent of GDP, respectively.[17] In the absence of this remittance income the current account surpluses generated in 2004 and 2005 would have been deficits. While the causes for this surge in income are not well understood it is believed to be related to the growing *diaspora* of both unskilled and technically well educated Mongolians who, unable to find work in their respective areas of expertise, are migrating in increasing numbers to other countries in the region, most notably South Korea, as well as beyond. This phenomenon appears to be the appropriate response to domestic labor market conditions

[17] The decline in remittances in 2005 is apparently related to loss of unlicensed offshore transfer facilities utilized by migrants. This interruption is believed to be temporary and a recovery to the previous trend is expected in 2006.

where the employment options would have been unemployment, underemployment, or, for skilled workers employment in an unskilled position. The only policy implication then is for government not to intervene in any manner other than to ensure that there are no domestic barriers to emigration, or to encumber remittance inflows in any manner, either through taxation or transfer costs.

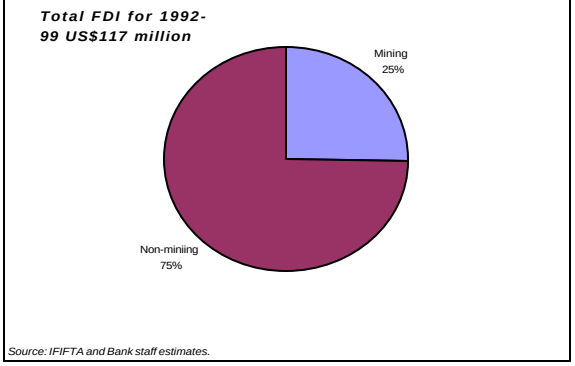
1.51 There has also been a fivefold increase in foreign direct investment (FDI) inflows since the 1990s—from a yearly average of about US$15 million during 1992-99 to US$85 million during the 2000-05 period (the latter equivalent to about 4 percent of GDP in 2005). Striking too is the seven fold increase in *approvals* of FDI from an annual average of US$30 million during 1992-99 to US$208 million over 2000-05. FDI flows, during the 1990s were predominantly for non-mining activities with mining related FDI only accounting for about a quarter of all FDI.[18] Within the former the FDI went to light industry, trade, transport and tourism, garments (mainly cashmere), banking information technology and construction sectors in almost equal shares. This situation saw a dramatic shift during the period 2000-05 when mining sector FDI doubled its share in overall FDI. The composition of non-mining FDI also changed (where trade, transport and tourism emerged as the dominant sub-sector, roughly doubling its share in non-mining FDI). It should also be noted that FDI classified simply as "other" now represents about one-third of FDI (Figures 1.22(a)-(d)) See Chapter 3 on the economic diversification potential that is emerging in Mongolia today.

1.52 The increases noted above in FDI flows and approvals, reflects Mongolia's emerging reputation globally and its nascent success in macroeconomic management. In particular the unprecedented interest in the mining sector can to some extent be attributed to the Mining Law of 2000, which was well received by the industry. The policy implications of the surging FDI inflows concern mainly the domestic legal and regulatory framework and macroeconomic management. Maintenance of a legal and regulatory environment and practice that is considered to be compatible with international best practice will maintain and enhance FDI inflows as will continued good macro-management. Conversely deterioration in either of these elements could lead to disruption of FDI, or worse, a reversal which could then have a self-fulfilling adverse impact on the macroeconomic side. In this regard changes in 2006 to the mining taxation regime increase the risks to the downside. Finally, there is a need to review the classification system for FDI to ensure that it can provide useful input into policy, particularly in terms of newly emerging areas which, under the present system are not classified well so as to allow identification.

1.53 Just as there have been some significant movements in the sectoral composition of FDI from the 1990s to the present, so too has the origin of FDI changed. Ten countries account for 80-90 percent of all FDI. During the 1990s China was the largest source of FDI accounting for about one-quarter of all FDI into Mongolia. This share has increased to about half during the 2000-05 period. Similarly, Canada has emerged as a dominant source of FDI since 2000 accounting for about one-quarter of the overall FDI amount, most of which coming into the Mongolian mining sector investment (Figure 1.23(a) and (b)).

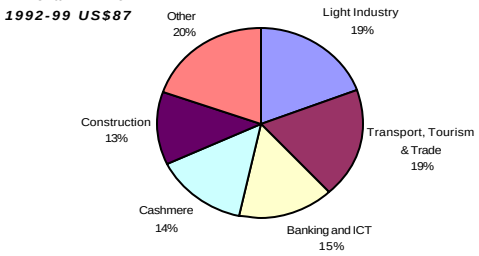
[18] The analysis of the sectoral composition and origin of FDI presented here proxies approvals data.

Figure 1.22(a): Non-Mining Foreign Investment was important in the 1990s...



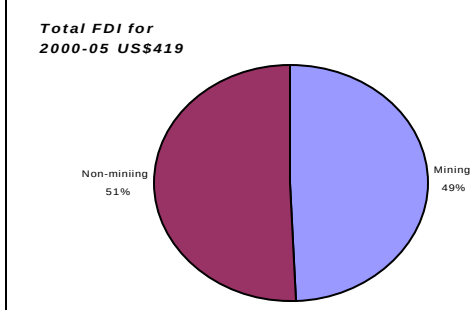
Source: IFIFTA and Bank staff estimates.

Figure 1.22(b): ...but lacked any dominant sectors



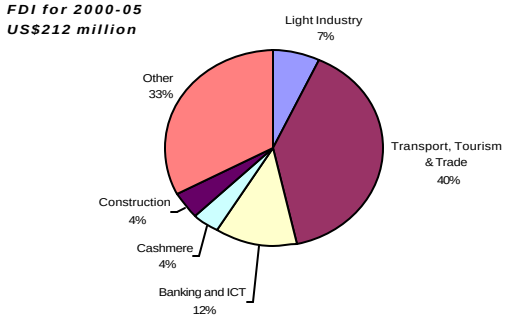
Source: IFIFTA and Bank staff estimates.

Figure 1.22(c): Since then foreign investment for mining has soared...



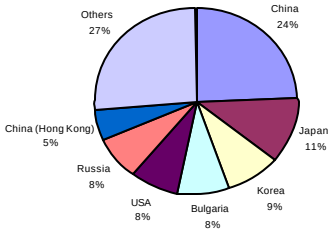
estimates.

Figure 1.22(d): ...while in non-mining FDI, trade, transport & tourism are emerging as important



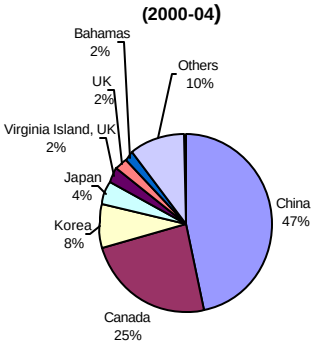
Source: IFIFTA and Bank staff estimates.

Figure 1.23(a): FDI used to come from a mix of former transition economies and others... (1990-99)



Source: FIFTA.

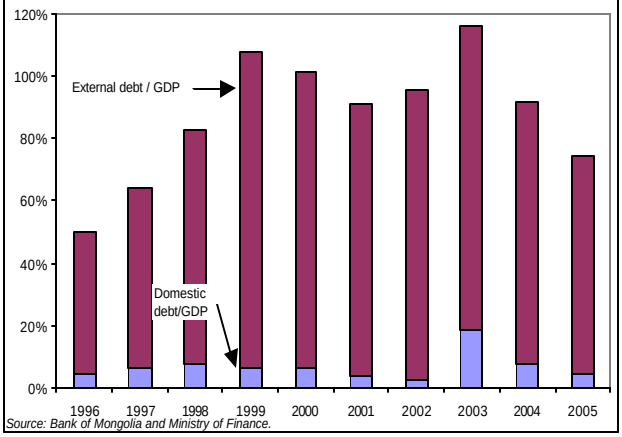
Figure 1.23(b): ...but there has been a shift towards China and new partners (2000-04)



Note: The direction of FDI data is not yet available for 2005.
Source: FIFTA.

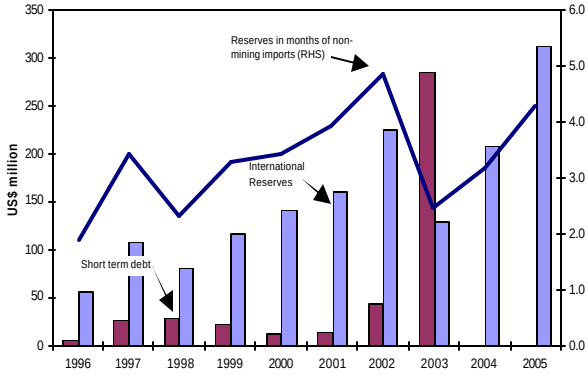
1.54 *High levels of indebtedness have been relatively well managed.* Mongolia has been fortunate in that it has received unprecedented support from the international community. Both multilateral and bilateral partners have provided a generous mix of grant and loan funds since the earliest days of the transition which have helped it weather a number of adverse shocks. These have been utilized both for budget support as well as to build international reserves. These financial flows have in turn reduced the call on domestic borrowing in the process avoiding further inflationary pressures. As a result domestic debt has increased modestly over the decade to 2005, with the ratio of domestic debt to GDP remaining low at about 4 percent.

Figure 1.24(a): Foreign borrowing has financed the transition...



Source: Bank of Mongolia and Ministry of Finance.

Figure 1.24(b): ...allowing reserves to be built and vulnerability managed



Note: All short term debt was repaid in 2004 and presently stands at zero.
Source: Bank of Mongolia.

1.55 One unavoidable consequence of the recourse to foreign borrowing has been a rise in the country's foreign debt which has nearly tripled between 1996 and 2005. The debt burden as measured by the ratio of external debt to GDP has, however, not risen by as much increasing from 45 percent to 88 percent during the same period, the latter equivalent to an NPV of 56 percent. Notable too is the high degree of concessionality in the public external debt carrying an average maturity of 40 years, and an average interest rate of less than one percent reflecting a grant element of 81 percent.[19] The settlement in 2003 of pre-1990 convertible Ruble debt to Russia was also undertaken on unprecedented terms. Nonetheless the country remains exposed to considerable risk of debt distress and was classified as a moderately indebted country. As a result of these developments Mongolia has rebuilt its international reserves over the past decade, in the process more than doubling its reserve cover and improving its vulnerability(Figure 1.24(a) and (b)). The most recent joint IMF/World Bank debt sustainability analysis (DSA) concludes that Mongolia is at moderate risk of debt distress over the medium term, although the debt burden is likely to remain sustainable over the long term, if the authorities continue to borrow exclusively on concessional terms and the external economic environment evolves broadly as envisaged in the baseline scenario of sustained output and export growth.[20]

[19] Source: World Bank, Debtor Reporting System (DRS), 2006.
[20] See *IMF, Staff Report for the 2006 Article IV Consultations, Annex 1 – Mongolia Debt Sustainability*.

2. WHAT WILL IT TAKE TO KEEP MONGOLIA GROWING?

The analysis presented here identifies a number of "binding" constraints that need to be alleviated to ensure high, broad-based, private sector-led growth in Mongolia in the next ten years. In recent years, low levels of private investment in sectors, other than mining and construction, have been due to low returns from economic activities rather than the high cost of capital. Returns have been low due to the following constraints: (a) Infrastructure bottlenecks that have led to costly transport, complex logistics, and long transit times; (b) Distortionary taxes, including lately in mining sector activities, and complex customs and trade rules that have increased the implicit cost of doing business in Mongolia; (c) Negative coordination externalities that have led to the inability of exporters to comply with international quality standards, and environmental degradation has occurred in the production processes; (d) Growing corruption and crime—symptoms of rising inequalities—are partly stemming from perceptions of lack of transparency and accountability in policy decision making and public sector governance; and (e) the high cost of capital, although lower than in previous years, that is primarily due to poor financial sector intermediation.

2.1 The analysis presented in the previous chapter showed that the transition of the Mongolian economy from a centrally-planned to a market-based system has advanced well relative to most other economies in similar circumstances. In the short space of fifteen years, one has seen much progress in the implementation of fundamental economic reforms on price liberalization, privatization and establishment of market institutions. Overall macroeconomic policies have remained prudent, debt levels have become manageable (although the macroeconomic outlook remains somewhat vulnerable to risks that need to be monitored and managed effectively), and a freely floating exchange rate regime is now in place. Foreign direct investment and Mongolian workers' remittances have increased significantly in recent years fuelling the observed high GDP growth. Public financial management reforms are underway including the recent installation of an integrated Government Financial Management Information System (GFMIS) in the Central Government and the provinces (*aimags*).

2.2 The structure of the economy has, however, evolved in a manner where the sources of real GDP growth have become very concentrated, heavily dependent on mining and livestock sector activities, and employment generation elusive, despite having a young and educated labor force. Economic activities and the population are becoming more concentrated in the Ulaanbaatar metropolitan area and its environs (the so-called "Ger" areas) with associated issues of pressure on natural resources, increasing demand for utilities (especially water, electricity and heating), and environmental pollution (some of a structural nature that emerge from the type of wood-fired heating stoves used in the Ger areas and energy losses from the mode of heating energy transmission and distribution). The increased trade and openness of the economy has meant that Mongolia has become increasingly vulnerable from the

dependence on a narrow range of exports, increasing dependence on foreign direct investment inflows and remittances from its citizens living abroad. In addition, risks of increasing oil prices, declining mineral export prices and reversal of investor sentiment due to political uncertainties at home and abroad must be contended with as well. Also, given the choice that Mongolian society has made towards embracing a market-oriented nature of its development process going forward, the key question then becomes: *What will it take for Mongolia's real GDP growth to remain high in the next ten years, and to be accompanied by a flourishing private sector and supportive public sector?*

2.3 To answer this question, one must deduce the proximate determinants of growth in Mongolia looking at its recent history and evolution of the structure of its economy, and then identify what poses the greatest immediate impediment to future growth on the basis of these stylized facts and cross-country experiences (or "benchmarking" when comparable data is available).[1] To this end, the discussion in Chapter 1 on the evolution of the structure of the Mongolian economy during the past decade of reforms and its current endowments makes it evident that the mining and livestock sector-related activities will remain important in supporting economic growth and development for many years to come. Meanwhile, there is wide acceptance in the Government and Mongolian society that in order to sustain high rates of economic growth and market forces to flourish one needs to put in place appropriate incentive structures to promote efficient production, continued investment (domestic and foreign) and prudent resource management, including due consideration towards managing environmental degradation.

THE "BINDING CONSTRAINTS" TO FUTURE BROAD-BASED GROWTH

2.4 Clearly, the mining sector will remain a key source of Mongolia's future growth. It is Mongolia's fastest growing sector today, but it officially employs only four percent of the workforce, and is also very capital-intensive. Hence, the country faces the challenge of creating new opportunities for its rural population and the urban unemployed/discouraged workers. It is imperative, therefore, to diversify their available sources of income in a dynamic and efficient non-mining private sector in the future. This section of the chapter discusses the obstacles one sees today that tend to hamper this aim of diversifying its sources of income (i.e. what the economic literature calls the "binding constraints" to growth).

2.5 The "growth diagnostics" analysis undertaken for this report identified the following binding constraints to Mongolia's future growth:

a) Infrastructure bottlenecks and complex logistics that have led to costly transport, complex logistics and long transit times.

b) Distortionary taxes, including lately in the mining sector activities.

c) Need for better coordination: in trade and logistics with Mongolia's neighbors; in the laws and regulations the Parliament passes; in the Sector strategies and corresponding implementation plans that the Government designs; and policies for efficient natural resource management (NRM) and minimizing environmental degradation.

[1] This, in fact, is in effect what the "Growth Diagnostics" methodology (a la Hausmann, Rodrik, Velasco (2005)) postulates in order to identify the "binding constraints" to growth in an economy.

d) Growing corruption and crime, symptoms of rising inequalities, and discontent with decisions and administrative processes in government that are perceived as being non-transparent and lack accountability.[2]

e) Vicious competition among commercial banks to attract depositors and make loans in an environment where assessment of creditworthiness of borrowers and bankruptcy collections are limited.

2.6 The first four constraints lower returns to capital in the non-mining sectors of the economy. The rationale for arriving at these constraints is provided below. The last binding constraint is the reason for the high cost of capital that one sees in Mongolia today.

Infrastructure bottlenecks and complex logistics

2.7 The 1997 World Bank Country Economic Memorandum for Mongolia identified underdeveloped infrastructure as one of the most important constraints to growth.[3] In the current circumstances of a rapidly growing economy with a changing structure that a market economy entails (as discussed in Chapter I), infrastructure bottlenecks in some key areas of the country have become critical. For instance, in 2005, delays in obtaining basic service connections are still longer and service reliability is still lower in Mongolia than in other East Asian countries.

2.8 The recent World Bank Productivity and Investment Climate Survey (PICS) 2004 help us narrow down *where* the bottlenecks are most pressing. Survey results showed that less than a quarter of the firms viewed the reliability of and access to electricity services as a major obstacle, and even fewer, viewed water and telecommunication services to be an issue.[4] The reason for the relatively low priority Mongolian firms attach to the inadequacies in the provision of the above infrastructure services is the fact that, unlike in other East Asian countries, service interruptions did not result in large production losses. This is partly due to the low level of capacity utilization in Mongolian firms.[5] While in East Asia each day of electrical outage results in a production decline equivalent to 0.75 percent of sales, in Mongolia the loss from each day of electrical outages (22 days a year in total) is equivalent to only 0.06 percent of sales.[6]

[2] See also Chapter 7 for further details in this regard.
[3] World Bank (1997)
[4] The investment climate report does not mention telecommunication services as a constraint to growth either. This is encouraging as this sector creates conditions for birth and growth of new information technology firms that are vital for productivity growth. A cross-country comparison based on data from World Bank's SIMA suggests that just like in China most of the main lines are in urban areas, but the number of main lines per capita is lower than that in Kyrgyzstan and Turkmenistan, and much lower than the one in China. Telephone services have become more reliable over the past 10 years, and the number of people on a waiting list for mainlines has steadily declined over the past few years. Business telephone connection charges are comparable to those in the U.S. and have declined steadily over the past 5 years.
[5] Capacity utilization is broadly measured as the ratio of actual output to what could be potentially produced given existing human and physical resources. While capacity utilization has risen in the last three years, it is still low at just over 71 percent.
[6] The loss from each day of water supply failure in Mongolia is 0.075 percent of sales, compared to 1.3 percent of sales in East Asia (World Bank 2006b).

2.9 Instead, there was widespread dissatisfaction with the inadequacy of transport services, with 38 percent of firms mentioning it as a major problem.[7] Transportation services for freight movement are limited, costly and unreliable. The majority of goods are moved by rail and rail transport costs are much higher than those in other landlocked countries in Central Asia (Table 2.1).[8] For example, while for Kazakhstan, Uzbekistan, and Kyrgyz Republic the transport costs per kilometer to transport a twenty-foot equivalent unit (TEU) container to the nearest port ($/km/TEU) are around $0.37, Mongolia's are $0.61—comparable to the costs faced by Tajikistan whose infrastructure was severely damaged by the civil war in the mid-nineties (1992-1997). The cost of border crossings in terms of $/TEU and hours spent at the border are also much higher for Mongolia than those for landlocked countries in East Asia (e.g. Lao) and South Asia (e.g. Nepal). These costs account for as much as 28 percent of the total transit cost paid by Mongolian trading companies.

Table 2.1: Rail Transport Costs

	Kazakhstan	**Uzbekistan**	**Tajikistan**	**Kyrgyz Rep.**	**Mongolia**	
	Almaty	Tashkent	Dushanbe	Bishkek	Ulaan Baator	
	Trade	Trade	Trade	Trade	Exports	Imports
Distance to nearest port* (km)	3380	2720	2040	3100	1700	1700
Cost ($/TEU/km)	0.37	0.35	0.59	0.34	0.61	0.87

Source: staff estimates based on data for Kazakhstan, Uzbekistan, Tajikistan, Kyrgyz Republic from Chapter 5 in Broadman (2005) and data on Mongolia from World Bank (2006b).
** Karachi for Kazakhstan, Uzbekistan, Tajikistan, Kyrgyz Republic; Tianjin for Mongolia.*

2.10 *Rail transport costs are relatively high as well.* The majority of Mongolian transit traffic is carried by rail through one rail link to the nearest Chinese port of Tianjin. This rail operates at the wide-gauge used in Russia, rather than the standard gauge used in China. Hence, upon reaching the border crossing, either the axles on the wagons need to be changed or containers have to be physically unloaded from one wagon and transferred to another wagon. It is estimated that this operation makes up 25 percent of the overall transport cost to port. A cost that Mongolian private firms can ill afford, especially those that are just starting out and beginning to compete in the international markets.

2.11 *The current practice of using a combination of road and rail transportation is also costly.* Although it is possible to transport goods from China to the border with Mongolia by road and then to the capital city by rail, the transfer extends the time and adds to the total transport cost. In fact, it costs more to transport goods from China to Mongolia by road-rail, then only by rail. The road option may become a good alternative when the paved road from Ulan Bator to China is completed in the next five years.[9]

[7] Even though only 38 percent of firms surveyed as part of the Productivity and Investment Climate Survey (2004) perceived transportation to be the most severe constraint to growth, the share underestimates the severity of transportation services as an obstacle to trade and export growth since the sample includes both exporters and domestic-oriented firms (i.e. firms that do not trade).

[8] The comparators are landlocked countries in Central Asia. Landlocked countries typically face much bigger constraints to trade with the outside world than coastal countries.

[9] Currently, there are no paved roads from the capital to the border with China. The density of the total road network and the percentage of paved roads in Mongolia are much lower than those in China, Russia, and other land-locked countries in Asia (Source: World Bank, SIMA).

2.12 *Air transport is also an option, but remains negligible in importance at this time.* It accounted for only 0.02 percent of all freight movement in 2000, and has been used to transport mostly livestock-based merchandise products. International air services are also a binding constraint to growth of Mongolia's tourism industry as they are unreliable and lack peak period capacity. During the short summer months, when most tourists would like to visit the country, there are one or two daily services from a few destinations and tour operators indicate short supply of seats and unreliable advance reservation system (World Bank 2006b). Similarly, there are logistical constraints at Mongolia's airports for meat processors, but these are less of a problem currently since Mongolian meat exports have declined drastically of late due to official restrictions on products of animal origin imposed by Russia and China for fear of contagious "foot and mouth disease".

2.13 *The transport cost for imports are much higher than the transport cost for exports.* Currently, the export volume is only 10 percent of the import volume that is transported in containers along the Ulan Bator-Tianjin corridor. This imbalance raises the transport cost for imports because the fee for an empty container that returns adds to the transport cost (by $436 per TEU by rail-rail and $514 per TEU by road-rail). This implies that transport costs from the port of Tianjin to Ulan Bator are 42 percent higher than the already high transport costs for exports (Table 2.1). Exporters relying on imported intermediate goods are especially disadvantaged as a result. These high costs are a serious constraint to growth of the manufacturing sector in Mongolia and its integration with Asia's production sharing networks. They pose a serious obstacle to increasing the size of Mongolia's small domestic market for manufactured goods, realizing economies of scale, and diversifying the economic base. (Table 2.2)

Table 2.2: Composition of Mongolia's Merchandise Exports

(percent of total)

	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05
Primary goods	75	67	73	83	89	84	83	82	76	72	62	61	63	86	87
Cooper	60	45	42	51	53	41	35	27	26	30	28	26	26	33	31
Gold	8	9	6	3	11	12	21	25	21	13	14	22	25	28	31
Cashmere	1	3	3	7	9	12	6	7	10	10	11	6	4	5	5
Flour spar	4	3	2	3	4	5	4	4	4	4	4	3	3	2	2
Other primary	3	7	20	18	12	14	18	19	15	15	5	5	5	18	18
Manufactures	25	33	27	17	11	16	17	18	24	28	38	39	37	14	13

Source: World Bank (LDB)

2.14 *In addition, border procedures, including customs and trade rules, are not streamlined resulting in long and uncertain transit times by rail.* [10] Whereas the border crossing time for the other landlocked countries in East Asia is under 6 hours on average, with a maximum of 25 hours, the border crossing time for Mongolian cargo is 25 hours on average, with the maximum extending to 75 hours.[11] The uncertainty about the hours spent at the border implies that exporters find it difficult to meet the delivery requirements of overseas

[10] Source: Mongolia's Ministry of Infrastructure (2002).

[11] Source: Application of UNESCAP Time/Cost-Distance Model and Route Analysis, presentation by Geetha Karandawala, Chief, Transport Facilitation Section, Transport and Tourism Division, UNESCAP at the National Workshop and Advisory Services on Trade and Transport Facilitation Ulaanbaatar, Mongolia, 17-19 April 2006.

buyers, especially for perishable goods. Some must incur additional storage costs if they deliver the goods early at the border. Such delays increase the costs for exporters and hamper their market opportunities.

2.15 *High transport costs and complex logistics are a binding constraint to growth of firms relying on trade for their growth opportunities.* Access to foreign markets is especially important to Mongolian firms as the country is land-locked and the domestic market is tiny due to low population density and low per capita income. High rail transport costs coupled with heavy reliance on railways for freight movement (in 2000 accounted for 86 percent of all freight movement) and long and uncertain transit times hurt Mongolia's export competitiveness and the growth prospects of a private sector that is operating below capacity. The high transport costs for Mongolian firms translate into high export costs which are among the highest in the world (as was shown earlier in Table A2.8), and even higher import costs, thereby limiting opportunities for Mongolia's manufacturing sector to integrate with production networks in East Asia.

2.16 Clearly, given the country's comparative advantage in mineral and land-intensive tradable products, the high transport costs will matter for the overall development in Mongolia.[12] According to transportation cost data from the US,[13] which provide an excellent representative sample of global transportation cost, mineral products have some of the highest transport margins in commodity trade because they are mostly bulk, low value added commodities. However, there is a substantial variation in transport margins within ores. Margins are high for iron ore concentrates and pyrites, but very low for uranium, lead silver and precious metal ores because of the high unit price of these types of ores. The bulkiness and the use of specialized shipping in transporting fish and livestock products contributes to the high margins on farm products. Finally, the high cost of transport services will prove to be a much bigger problem for Mongolia's economy if it faces an environment of weak prices for copper and gold in future. Under those circumstances, previously profitable mining operations may turn out to be non-viable leading to a much more severe drop in economic activity and trade volumes.[14]

2.17 The high transport costs imply that Mongolia needs to use its comparative advantage in mineral products to diversify into products and services for which transport costs are low and higher value added products and services for which transport costs are a small share of the value of the product. Examples include services that can be traded over communication networks, electronic goods and components, electricity produced from coal rather than direct coal exports.

Taxation policies and its administration are leading to adverse incentives

2.18 A *Tax Reform Package* was approved by Parliament in June 2006 for implementation from January 2, 2007. The overall impact of this tax package has been positive (See Table

[12] Source: Gehlhar (1998).

[13] Source: US Bureau of Census Foreign Trade Division. Data on transport margins for Mongolian exports were not available at the time of writing.

[14] Mongolia CEM 1997 provides examples of promising projects in mining that failed to materialize because of expensive or non-existent infrastructure.

2.3). According to the first quarter budget performance for this year, actual tax collection has exceeded planned budget targets for all items except for the Windfall Tax. Though the tax revenue plan was higher in 2007 than in 2006, corporate income taxes (CIT) raised were 131.5 percent of planned target, the actual personal income tax (PIT) revenue was 110.1 percent of planed target and the value added tax (VAT) revenue was 116.6 percent of plan target. This favorable tax effort was due to expansion of the tax base as well as overall growth in the economy.

2.19 The new tax package has removed the incentive for firms to remain small (which was the practice before in order for them to avoid the higher tax rate). Some firms that used to have several small but related companies dealing with different businesses now have restructured into one industrial group, thereby integrating all their businesses under one umbrella company. Under the new tax regime, even after integration the company is still eligible for a 10 percent CIT rate, while the integration has enabled them to save on operational costs that were applicable earlier for each of the single entities. Some of these savings are being channeled towards advertising expenditures that increases competition among firms. Meanwhile, as the medium sized firms are merging, the small cooperatives and sole proprietorship businesses are being officially registered. This, in turn, is increasing the number of taxpayers. For instance, in Selenge aimag, number of corporate taxpayers increased by 56 entities compared to the same quarter a year ago (i.e. the 1st. quarter of 2006). Anecdotal evidence suggests that tax compliance seems to be improving as well.

Table 2.3: Tax Reforms that became Effective on January 1, 2007 are a Step in the Right Direction

Tax types	Previous Tax Regime		After 2007 amendments on Tax Law	
VAT		15%	10%	
CIT	0-100,000,000	15 percent	0-3,000,000,000	10 percent
	100,000,001>	30 percent	3,000,000,001>	25 percent
PIT	0-2,400,000	10 percent		
	2,400,001-4,800,000	Tg 240,000 plus 20% of income exceeding 2,400,000 togrog	10 percent	
	4,800,001 and above	720,000 togrog plus 30% of income exceeding 2,400,000 togrog		
Mining Royalty	Domestic	2.5%	Domestic	2.5%
	Export	5 %	Export	5%

2.20 It is not only the tax *rate* that will influence the incentives for firms and individuals to undertake activities that will foster Mongolia' sources of growth but *how* they are collected (tax administration) and from *whom* (tax incidence). Calls for lower tax rates that one hears from the private sectors in most countries should thus be considered carefully with this in mind.

Table 2.4: Average Number of Days Spent a Year Meeting with Tax Inspectors

Mongolia	9.0	Europe & Central Asia	2.8
East Asia & Pacific	5.4	Azerbaijan	1.3
Cambodia	7.2	Kazakhstan	3.2
China	12.0	Kyrgyz Republic	3.2
Malaysia	3.8	Russian Federation	2.5

Source: World Bank (2006b).

2.21 *The tax code has resulted in a narrow tax base and possibly increased informality.* Although in 2005 the total tax payable by a Mongolian firm was on average 32.2 percent of the gross profit for the year—a share lower than that of firms in other comparable countries in East Asia and elsewhere in the developing world, the tax code tends to harm the growth of Mongolia's private sector by creating incentives towards tax avoidance; paying less taxes by staying small; and creating unnecessary disincentives to start-up business.[15] As a result the tax base in Mongolia is very narrow. The top 100 taxpayers provided over 90 percent of the revenues (Table 2.5), and nearly half of the firms reported zero or negative profit in 2004.[16] It may have also motivated firms to operate in the informal sector. Fortunately, a major overhaul of the tax code took effect on January 1, 2007 which tries to address a number of major shortcomings of the tax code, including the perverse incentives it causes for firms to avoid paying taxes by staying small.

Table 2.5: Mongolia's Tax Base

	2002	2003	2004
No. of distinct tax statements filed	19,835	21,733	25,169
Compliance rate: % paying positive tax	58.1	54.4	54.4
% reporting negative or zero net income	43.0	41.6	43.6
Share of EEOIT* paid by top 100 firms (%)	87.9	89.7	92.2

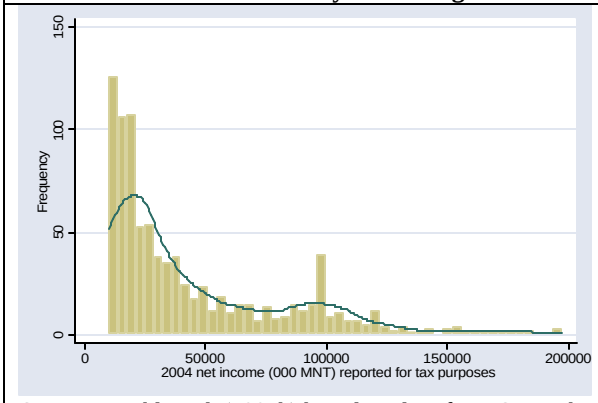
Source: World Bank (2006b).
**EEOIT stands for "Economic Entity and Organization Income Tax Law".*

2.22 *Problems related to tax administration* (Figure 2.2) *are also just started to get addressed*[17]. Uncertainties remain as to the expected impact of the new mining taxation regime on the incentives it generates for existing and new entrants in this crucial sector in Mongolia. The mining sector generated an estimated 40 percent of tax revenues in 2006, up from 16 percent the previous year.[18]. The mining tax regime does not only entail the windfall profits tax but consists of a package of : corporate value added tax (VAT that has been lowered from 15 to 10 percent); personal income taxes (PIT) on its workers (unified for foreign and domestic workers at a 10 percent rate); windfall tax, royalties (that have been doubled from 2.5 to 5 percent); mining license fees (increased and its duration shortened in order to discourage speculation in mining rights and their underutilization); investment contracts (whose maximum duration has been doubled to 30 years), among others. In

[15] Double taxation agreements however have facilitated FDI and encouraged reinvestment.
[16] The Productivity and Investment Climate Survey does not provide information on the amount of profits or losses by firm.
[17] The ongoing World Bank *Governance Assistance Project* (GAP) has a sub-component that aims at providing relevant technical assistance to GDNT to improve tax administration. The ADB is also supporting efforts in the Mongolian Customs Administration to improve its operations.
[18] Source: IMF (2006).

evaluating the attractiveness of a taxation environment in a country, potential firms will typically look at this entire fiscal package when deciding to open or expand operations there.

Figure 2.1: Size Distribution of Mongolia's firms shows that there are only a few large firms…



Source: World Bank (2006b) based on data from General Department for National Taxation (GDNT).

Figure 2.2: …While the tax burden is large, in terms of tax rates and tax administration.

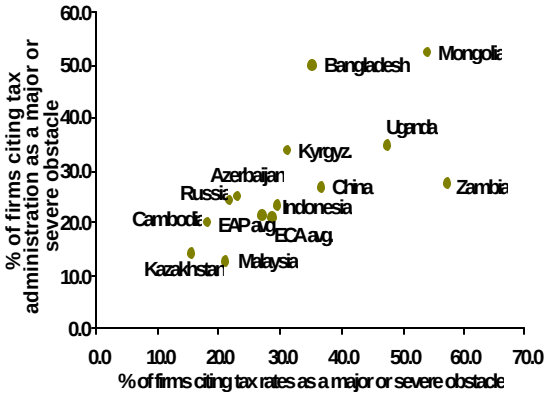
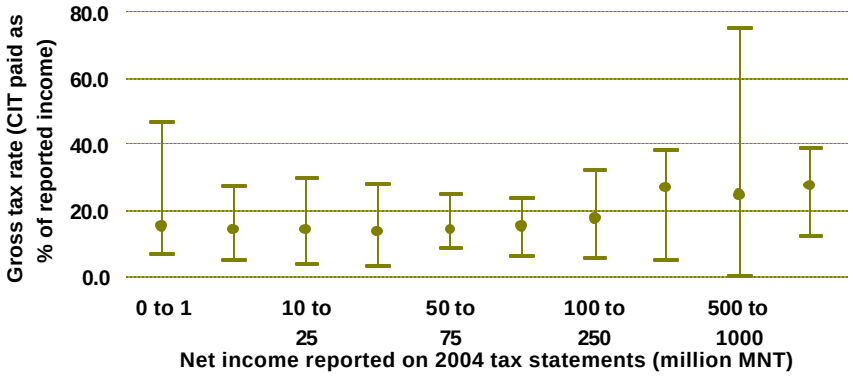


Figure 2.3: Effective Tax Rates Faced by Firms



Source: World Bank (2006b).

2.23 Tax evasion is also wide-spread as is the under-reporting by firms of labor costs.[19] Over a third of the firms appear to be under-reporting their sales. The World Bank Productivity and Investment Climate Survey (2004) found that, on average, firms report just over a quarter of their true labor costs in an effort to reduce the burden of labor taxes. These taxes average 29 percent of a firm's gross wages, which are unusually high for an economy at Mongolia's level of development. A negative by-product of this under-reporting is that firms that distort their balance sheets in an effort to avoid taxes are a lot less likely to have access to financing at levels that allow them to grow and improve the quality and variety of goods they produce.

2.24 When it comes to trade-related taxes, Mongolia uses duty exemptions on exports in order to stimulate processing and assembly. Since Mongolia can be considered a price taker both for inputs and outputs of most products, duty drawbacks are likely to do more harm than

[19] Source: 2004 Productivity and Investment Climate Survey.

benefit to Mongolia's small open economy.[20] This is because trade tariffs are already low and uniform (at 5 percent) in Mongolia while tax administration is weak. Exemptions are granted not only to imported inputs but to all sorts of product lines.[21] Such duty drawbacks also disadvantage domestic SMEs more since these small companies lack the expertise, incentives and political connections to go through the bureaucratic processes of obtaining a duty exemption.[22] Finally, an export tax on unprocessed cashmere, intended to encourage production and export of processed cashmere products, has resulted instead in an increase of smuggled cashmere into China, and has not led to the intended boost in processed cashmere output.[23]

2.25 The tax regime is a binding constraint for Mongolia's future growth. The urgent need to structure an appropriate tax environment and administrative burden for economic entities to operate and help the country continue to grow is well demonstrated by the sudden drop in tax revenues from gold production in 2006, when domestic producers reportedly sold to the Bank of Mongolia 6 tons of gold less between August 2005 and August 2006. This was further complicated by the filing of suits against the Government by some firms who alleged that the windfall tax on gold was unconstitutional since the index price on the basis of which this tax was to be computed did not exist.

Need for better coordination internally and internationally

2.26 *Firms need services, which require simultaneous, large scale investments, in order to "innovate", make profits and to market their products successfully*.[24] In developed countries these services are taken for granted by entrepreneurs. In developing countries, however, lack of such services is a serious obstacle to output expansion of existing products, improving the quality of existing goods, and new product development ("self-discovery"). Examples of such services include access to electricity, water, telecommunications, logistics transport networks, marketing, research and product quality information, health and quarantine measures to protect and improve the quality of agricultural output. In a global economy entrepreneurs need also access to information on international industry standards, and international trade agreements in order to compete in world markets and understand the implications of these agreements for their operations.

2.27 Coordination failures which create inefficiencies and stunt growth exist in Mongolia. These coordination failures stem from several areas, for instance:

i. in trade and logistics with Mongolia's neighbors;
ii. in the laws and regulations that Parliament passes;
iii. in the sector strategies and corresponding implementation plans that the Government designs; and

[20] Source: UNCTAD/WTO 2006.
[21] While 31.5 percent of imports were duty exempt, only 10 percent of imports were duty-exempt imports used for the production of exports in 2004 (World Bank 2006b).
[22] Studies have shown that duty exemptions are more likely to have a positive welfare effect if the economy is small with high input tariffs, low administrative costs, and uncorrupt tax authorities (Ianchovichina, 2005).
[23] The government has plans to abolish this export tax.
[24] See (Rodrik, 2004; Chandra 2006).

iv. policies for natural resource management and minimizing environmental degradation, among others.

This, supplemented by carefully selected prudent public investments in infrastructure, could have large beneficial impacts to deepen and diversify supply chains within Mongolia and generate growth, including in its mining and livestock sectors—the two sectors that will continue to be an integral part of Mongolia's future growth story. For instance, in the cashmere industry there are a few processors of cashmere who have buying power over a large number of herders who are supplying raw cashmere. These herders operate in remote areas, lack information, and are often forced to sell their cashmere either to traders at the farm gate or at informal provincial markets at 10 to 45 percent discounts from the prices in the main market in Ulan Bator. Herders realize that poor quality raw cashmere is a problem and are reluctant to allow buyers to separate their raw cashmere into different grades. They fear that they may not be able to sell the rejected cashmere, and therefore prefer to sell it in one lot. Buyers have responded by buying unsorted raw cashmere at lower prices in order to hedge the risk of poor quality.

2.28 Even if one wanted to invest in improving the quality of the cashmere that they sell to the firms, herders have lacked access to finance, information and infrastructure. Processors could have helped herders to improve the quality of raw cashmere but have been reluctant to enter into direct marketing or vertical relationships with them because of lack of transparent and enforceable contracting rules, and the difficulty to police such arrangements due to the small size of herds per household and the long term nature of the investment.

2.29 The problem has been compounded by lack of market information that is available to herders, and the fact that processors have had no incentive to form strategic links with downstream agents and to improve their productivity as government policies generally favor them.[25] The export tax on raw cashmere has provided incentives to processors to offer the same price regardless of quality. Herders have responded by smuggling cashmere into China and selling quality raw cashmere to Chinese buyers, thereby depriving domestic processing firms of high quality raw materials. This, in turn, results in Mongolian cashmere firms operating below capacity. High labor costs, unreliable energy supply, lack of technical skills, non-tax administrative barriers, and high transport costs have added to the problems of Mongolian cashmere processing firms.[26]

2.30 Another example of coordination failure is the government's inability to regulate the use of critical inputs such as land and water which have led to overgrazing, near saturation of land-use capacity, and soil erosion in Mongolia. Lack of regulation of water well use and poor public sector maintenance have decreased agricultural productivity and have left herders searching long distances for water facilities. The combination of these failures and the lack of risk management have worsened the impact of bad weather on the farm sector. Since sustainability considerations preclude further growth in the size of Mongolia's herds, it is essential to improve quality and efficiency by providing additional services to farmers.

[25] Labor productivity in Mongolia's cashmere processing companies is much lower than that in other countries (USAID, 2006)

[26] A study by USAID (2006) found that overall the manufacturing quality of cashmere apparel makers is good.

2.31 The remains the need to better coordinate the development of an international rail/road network to facilitate transit, international, and domestic trade, and air transport to facilitate tourism and international trade. Mongolia's poor transport network is a severe constraint to most activities in Mongolia, including mining. Given that infrastructure development takes resources and time, the government needs a transport strategy that addresses such logistics issues as soon as possible. Customs facilitation and transit procedures also need to be improved. Fortunately work on the latter has already begun.

Table 2.6: List of Selected Product Lines Facing Tariffs above 30 Percent in Russia

Code 6 digits	Product Description	MFN Tariff Rate
2003		
020120	Meat of bovine animals: other cuts, fresh or chilled, with bone in	30
020210	Meat of bovine animals: carcasses and half-carcasses, frozen	30
220860	Vodka	30
020220	Meat of bovine animals: other cuts, frozen, with bone in	31
650692	Other :-- Of furskin	31
020230	Meat of bovine animals: boneless, frozen	32
020726	Meat and edible cuts and offal of turkeys, fresh or chilled	32
611710	Shawls, scarves, mufflers, mantillas, veils and the like	32
020130	Meat of bovine animals: boneless, fresh or chilled	33
160250	Other prepared or preserved meat, meal offal or blood of bovine animals	33
640320	Footwear with outer soles of leather, and uppers which consist of leather straps	34
630190	Other blankets and traveling rugs	37
640420	Footwear with outer soles of leather or composition leather	37
160100	Sausages and similar products of meat, meat offal or blood	37
020110	Meat of bovine animals: carcasses and half-carcasses, fresh or chilled	38
420310	Articles of apparel, of leather or of composition of leather	38
640510	With uppers of leather or composition leather	41
620510	Ensembles: Of wool or fine animal hair	50
020621	Of bovine animals, frozen - Tongues	50
420321	Gloves, mittens and mitts, especially designed for use in sports	82
640590	Footwear with outer soles of rubber, plastics, leather or composition leather	82
621131	Other men's or boys' garments of wool or fine animal hair	105
2005		
640320	Footwear with outer soles of leather, and uppers which consist of leather straps	30
160220	Other prepared or preserved meat, meat offal or blood: of liver of any animal	30
611110	Babies' garments and clothing accessories, knitted or crocheted – of wool or fine animal hair	33
020230	Boneless cuts	36
160100	Sausages and similar products of meat, meat offal or blood	37
160249	Other prepared or preserved meat, meat offal or blood	38
020220	Other cuts with bone in	38
420329	Gloves, mittens and mitts - Other	56
020321	Frozen – Carcasses and half-carcasses	58
020621	Of bovine animals, frozen - Tongues	70

Source: Tarr, Shepotylo, and Koudoyarov (2005). See Tarr et al. (2005) for a complete list of products facing tariffs above 30 percent.

2.32 Better coordination in trade and logistics with Mongolia's neighbors is imperative for growth as well. High protection in China and Russia on a number of key Mongolian exports has been cited as an obstacle to export growth. Indeed, in 2003 a number of leather, wool and meat products faced tariffs above 30 percent in Russia (Table 2.6). Since then protection has declined in Russia, and remains high mostly on meat and meat related products (Table 2.6). At this time, however, the main obstacle to expanding meat exports is not the tariff, but the current ban on imports from Mongolia that was put in place after the outbreak of Hoof and Mouth disease in Mongolia in 2001.

2.33 The inability of Mongolian livestock-based products to meet international sanitary and phyto-sanitary (SPS) requirements in foreign markets is a binding constraint to Mongolia's future growth that needs immediate attention domestically. To this end, facilitation by the Government and others (like self-governing private sector firm associations) to make widely available marketing, export promotion and product quality information is critical to the success of companies.[27] Many medium and small companies and companies operating in the informal sector do not have funds to license new technologies or to send their employees to foreign markets for training. Lack of marketing skills and information is one reason why Mongolian firms miss opportunities to expand in foreign markets. For example, they have not been able to take advantage of the duty free access to the EU for 7200 products.

2.34 Diversification and deepening of supply chains within Mongolia's mining sector is also extremely important given the country's vast mineral wealth and high transport costs. The government of Mongolia however still does not have a comprehensive strategy for the development of the mining sector, and so far has not been effective in transforming its natural capital into intangible capital.

2.35 Finally, network of organizations—or knowledge clusters—is considered the main strategic and competitive asset of many developed resource-rich countries, which face increased competition from low-cost producers elsewhere (from Brazil, Chile and Eastern Europe).[28] For instance, in Sweden, the network of institutions permeating the forestry industry have been essential for maintaining and developing international competitiveness and the dissemination of skills and research from universities and research organization to the industry (see Box 2.1 which expands on the roles of the different members of the network). The network was especially critical to collaborative research projects involving several industries' institutions such as the multi-disciplinary research program entitled Paper-Color-Print. The program had the goal of developing Swedish expertise in paper processing, paper coating and printing technology and was conducted jointly by the Royal Technical University, the Swedish Pulp and Paper Research Institute, the Institute of Surface Chemistry, the Graphical Research Laboratory, and the Swedish Newsprint Mills' Research Laboratory, with financing from these institutions, independent research foundation and the government.

[27] According to Otsuka (2006) information about and access to markets, and access to specialized skills needed to improve product quality are critical to multi-faceted innovation, while access to credit matters only after multi-faceted innovation has taken place. His findings are based on research in a number of countries including China, Taiwan, Vietnam and Africa.

[28] This section is based on de Ferranti *et al*. (2002) and Blomström and Kakko (2001).

Box 2.1: Staying on the Cutting Edge through Partnerships between Academic Institutions and the Private Sector

Three technical universities in Sweden—the Royal Technical University, the Chalmers Technical University and the University of Karlstad—train engineers specializing in pulp and paper processing, biotechnology, and related fields. The industry's leading research institution—the Swedish Pulp and Paper Research Institute—finances student research projects, arranges guest lectures, and provides lecture rooms and equipment. The institute also undertakes a major share of the research and development activities of the cluster. The Swedish Pulp and Paper Research Institute and the three technical universities manage jointly a major share of postgraduate education.

Source: Blomström and Kokko (2001).

Lower private returns to capital due to perceptions of increased corruption and inadequate contract enforcement

Table 2.7: Selected Parameters of the Business Environment – Part II

	Cost of starting a business	Cost of closing a business	Total tax payable	Procedures for enforcing contracts	Cost of enforcing contracts	Time for enforcing contracts
	(% of GNI per capita)	(% of estate)	(% of gross profit)	number	% of debt	Days
Mongolia	5.1	8.0	32.2	29	17.6	314
Cambodia	236.4	No practice	22.3	31	121	401
Vietnam	44.5	14.5	41.6	37	31.0	295
Azerbaijan	9.5	8.0	44.9	27	19.8	267
Kazakhstan	7.0	18.0	45.0	37	11.5	183
Kyrgyz republic	9.8	14.5	67.4	44	12.0	140
Uzbekistan	14.1	10.0	122.3	35	13.5	195
Ghana	49.6	22.0	32.3	29	13.0	552
Uruguay	44.2	7.0	27.6	39	15.9	655
East Asia & Pacific	42.8	23.2	42.2	31.5	52.7	477
Europe & Central Asia	14.1	14.3	56.0	31.5	15.0	409
L. America & Caribbean	48.1	13.6	49.1	39.3	23.4	642
Middle East & N. Africa	74.5	12.1	40.8	41.6	17.7	606
OECD	5.3	7.1	47.8	22.2	11.2	351
South Asia	46.6	6.3	45.1	38.7	26.4	969
Sub-Saharan Africa	162.8	16.0	71.2	38.1	42.2	581

Source: Doing Business Data, World Bank (2006a).

2.36 According to more than half of the firms that participated in the most recent World Bank Productivity and Investment Climate survey (2004), corruption pervades every sphere of business activity. Firms paying bribes to obtain access to electricity, water, communication infrastructure are respectively 26 percent, 15 percent and 23 percent of all firms surveyed. A quarter of these firms pay bribes for customs clearances of traded goods as the number of

documents and steps required for trading across borders as well as the time spent on clearance procedures is much higher in Mongolia than in other countries in the world (Table 2.7). Unofficial payments, required for obtaining licenses, and the average bribe for different types of licenses were high—around 40 percent of the official fees according to World Bank (2006b).

2.37 According to Transparency International and the World Bank's Governance Indicators, corruption in Mongolia has worsened substantially since 2001, and perceptions of corruption as an obstacle to growth are more widespread in Mongolia than in a number of comparator countries.[29] Mongolia ranks 9th out of 62 countries, for which firm level survey data were available, in terms of its share of firms reporting corruption as a major obstacle to their growth.[30] Mongolia's Country Policy and Institutional Assessment (CPIA) score on transparency, accountability and corruption of the public sector is much lower than that of most countries in East Asia.[31] But Mongolia's rank on the Transparency International Corruption Perception Index is 3, slightly better than the 'B' median of 2.9 (Fitch).

2.38 Corruption appears to be a major impediment to large, successful firms in Mongolia, especially those based in the capital city.[32] The process of obtaining permits is nontransparent and many companies have to employ expensive mediators whose job is to negotiate the process of obtaining a permit. Inspectors, most commonly from the Tax Offices of the Government and the State Professional Inspection Agency, visited firms frequently. According to calculations in World Bank (2006b) the total cost of fines, fees and unofficial payments made up over half of the direct financial costs incurred by firms.

2.39 Government procurement is perceived to be corruption-ridden and non-transparent as well. More than half of the firms surveyed in the World Bank Investment Climate Assessment (PICS 2004) reported that they were expected to make an unofficial payment to government officials, whose value on average was over 4 percent of the value of the government contract in question. This average payment is higher than in most of the countries for which such data exist.[33] An even larger share of firms surveyed (64 percent) are concerned with the openness and fairness of the bidding process. There is little understanding of conflict of interest issues, and although the Law on Civil Service asks for income and asset declaration by public officials, the law has not been enforced.

2.40 The perception of nearly half of the firms surveyed is that individuals with political ties have a major or decisive influence on the formulation of laws and regulations governing the business climate.[34] Having political ties is considered more important in Mongolia than in Cambodia and in other countries in East Asia.

2.41 The process of acquiring land lease certificates has become a locus for corruption as it is extremely bureaucratic and costly. Disputes and lawsuits involving leases are increasing,

[29] See also Chapter 7 for further details in this regard.
[30] Source: World Bank (2006b).
[31] Only Tonga and Lao, PDR have scored lower than Mongolia on this dimension of the CPIA ratings.
[32] Source: World Bank (2006b).
[33] Source: World Bank (2006b).
[34] Source: World Bank (2006b).

while disputes over the use of state pastures, especially in the more densely populated areas, are common. Since access to credit depends mainly on collateral in the form of immovable assets (land or buildings), problems with land registration and leases are a constraint to growth in urban and rural areas.

2.42 Connected to the above is the weak contract enforcement (and perceptions thereof by potential investors) that have become an important obstacle to growth. The degree of confidence entrepreneurs have in the mechanisms for contract enforcement and dispute resolution tends to be strongly and positively associated with investment levels and economic growth.[35] Mongolia's institutions for contract enforcement though weak are improving and are not a binding constraint to growth (Table 2.7).

2.43 More than half of the firms surveyed expressed confidence in the ability of the judicial system to enforce their contractual and property rights in business disputes. However, only 10 percent of all firms have had disputes with clients or suppliers that had to be resolved in the judicial system, and of these firms 70 percent indicate that the mechanisms for dispute resolution are a severe impediment to doing business.[36] Although crime has been on the rise of late, especially in Ulaanbaatar, it does not appear to be a major obstacle to growth in Mongolia at this time. Less than 1 percent of firms considered it to be one of the three biggest obstacles to growth. Nevertheless, given, on average, in 2004 firms' losses due to crime added up to 1.6 percent of sales, higher than the average for East Asia (1 percent); crime needs to be kept from rising so as not to become a binding constraint to investment and growth in future.

2.44 Mongolia has taken recently a number of steps to combat corruption among which the following measures stand out:

(i) Ratification of the *U.N. Convention Against Corruption* in October 2005. The convention requires parties to simplify rules and regulations, enact right to information and conflict of interest legislation and take other measures to prevent corruption. Parties must also ensure the penalties for bribery and other corrupt acts are a sufficient deterrent and procedures are in place to permit the authorities to seize the proceeds of corrupt acts. The Government is now implementing the ambitious convention and to this end needs to bring Mongolia's laws into compliance with the convention. A working group has been established under a Vice Minister to review Mongolian law and draft the required amendments;

(ii) Adoption of an *anticorruption law* in July 2006 by the Grand Hural establishing an anticorruption agency and vesting it with the responsibility to administer an *income and asset declaration disclosure program*. The Agency was officially created in January 2007. On February 1 the Grand Hural passed an ordinance specifying the form the income and asset declaration must take and setting June 15, 2007, as the date for filing the initial report;

(iii) Last revision of an improved draft *code of Ethics* for Mongolia public servants discussed by public service representatives in April 2007. The draft is expected to be

[35] Source: Knack and Keefer (1995).
[36] Source: 2004 Productivity and Investment Climate Survey.

final, after an extensive consultation process. Two important revisions are the introduction of the notion of conflict of interest and the integrity principle. It is expected that the Code will be submitted to Cabinet under civil service regulations for approval in 2008.

OTHER OBSTACLES TO BROAD-BASED GROWTH

2.45 Clearly, Mongolia faces many other challenges in bringing about sustained broad based growth. But the "binding constraints" that have been identified above are distinguished from those that are not "binding" by the degree to which small policy actions to deal with them will have the largest direct impact on the proximate determinants of broad-based market-oriented growth—namely, accelerating factor accumulation, improving productivity through self-discovery and appropriability (*a la* Hausmann, Rodrik, Velasco, 2005) creating economic activities that lead to growth. Of course, the non-binding constraints will need to be addressed, but at a measured pace which will yield results in the long-term. The following paragraphs discuss those constraints that the "growth-diagnostics" analysis showed was non-binding in Mongolia for now.

2.46 ***The skills mismatch poses a constraint to future growth.*** Sustained growth in the future requires more and better education. Mongolia has a relatively large supply of workers with secondary education or higher. However, there is a mismatch between the skills demanded by the market and the skills that workers bring to the workplace. If unaddressed, the skills mismatch will become a serious constraint to growth as the demand for higher order skills grows.

Table 2.8: School Indicators, 2004

	Secondary school enrollment rates (gross) (%)	Tertiary school enrollment rates (gross) (%)
Mongolia	89.5	38.9
Cambodia	29.4	2.9
Vietnam	73.5	10.2
Azerbaijan	83.1	14.8
Kazakhstan	98.1	48.0
Kyrgyz republic	88.0	39.7
Uzbekistan	94.6	15.3
Ghana	41.8	3.1
Uruguay	108.0	39.3
East Asia & Pacific	70.9	19.4
Low income	45.1	9.1
Low & middle income	61.4	18.6
Middle income	75.3	26.5
High income	99.5	68.8

Source: World Bank, SIMA.

2.47 Higher secondary and tertiary enrollment rates combined with low dropout rates suggest the existence of a steady supply of educated labor in Mongolia. The country's secondary school enrollment rate of 90 percent in 2004 was similar to that in the Central Asian republics of the Former Soviet Union, and much higher than the enrollment rates in the group of low and middle income countries (Table 2.8). In fact, the tertiary school enrollment

rate in Mongolia was twice the rate in the East Asia region, and more than four times the rates in low income countries. The dropout rates in Mongolia have been relatively low, but they have been much higher for children in rural areas. About 78 percent of the children between ages 8 and 19 who start school ended up completing upper secondary school in 2005.[37] The rate is much lower in rural areas where only 65 percent of children managed to complete upper secondary school.

2.48 The demand for education has increased but job creation for skilled workers in the private sector has been limited.[38] The number of public colleges, technical and vocational schools rose to accommodate an increasing number of students seeking tertiary education (Table 2.9),[39] but in 2004 the percent of unemployed with secondary and tertiary education was 64 percent,[40] and except among large firms, a shortage of educated labor does not seem to be a significant concern in Mongolia.[41]

Table 2.9: Number of Academic Institutions in Mongolia

	2001-02	2002-03	2003-04	2004-05
Universities, colleges, technical and vocational schools	210	216	215	219
Public	71	72	78	76
Universities	8	8	8	8
Colleges	33	34	39	35
Technical and vocational schools	30	34	39	35
Private	132	137	130	137
Universities	3	3	3	3
Colleges	127	133	126	132
Technical and vocational schools	2	1	1	2
Branches of foreign universities	7	7	7	6

Source: Mongolian Statistical Yearbook (2004).

2.49 A particular challenge, therefore, is the mismatch between the skills demanded by the market and the skills workers bring to the market. While a high percentage of high skilled workers are employed in jobs well below their qualifications, over half of the large firms cite a shortage of skilled workers as a reason for not operating at full capacity. A third of the firms report vacancies for professionals, and nearly two-fifths report vacancies for educated workers. Employers—especially large firms—complain about shortage of certain types of skills such as practical knowledge (e.g, English), technical knowledge (e.g., computers), and managerial, marketing and behavioral skills (work ethics and ability to work in teams).[42] It appears that Mongolia's education system continues to emphasize traditional academic subjects and memorization rather than the skills increasingly demanded by the market.

[37] Source: CPIA ratings and discussion on building human resources in Mongolia.
[38] Source: World Bank (2006b).
[39] According to the World Bank's CPIA rating report on human capital demand for existing schools is so high that many schools operate multiple shifts.
[40] Source: World Bank, SIMA.
[41] Source: World Bank (2006b).
[42] According to representatives from the Foreign Investment and Foreign Trade Agency marketing knowledge and skills are critical to export growth.

2.50 The data on wages of different types of labor support these findings (Table 2.10). In 2006 skilled agricultural and fisheries workers earned less per month than unskilled workers employed in urban and rural areas. Clerks, service and sales workers earned approximately as much as unskilled laborers. Large premiums on skills were earned only by legislators, senior officials and managers. Premiums earned by professionals, and plant and machine operators and assemblers, presumably working in mining and construction, were larger than those of other skilled workers but significantly smaller than those for legislators and managers.

Table 2.10: Monthly Average Wages and Salaries in 2006

(thousand tug)

Legislators, senior officials and managers	195.8
Professionals	152.2
Technicians and associate professionals	132.2
Clerks	93.4
Service workers and shop and market sales workers	103.2
Skilled agricultural and fishery workers	74.7
Craft and related trades workers	130.8
Plant and machine operators and assemblers	147.7
Elementary occupations	91.3
Average	128.5

Source: Mongolia National Statistical Office.

2.51 Poor quality jobs for skilled workers and underutilization of the skilled labor force are also problems in Mongolia. Although the labor market is relatively flexible,[43] high social security taxes and the fact that these are applicable only to permanent workers, tends to result in poor-quality job opportunities by increasing the share of contract and informal jobs. Also, according to the most recent LSMS, a high percentage of working age people between the age of 25 and 29 neither look for jobs nor are in school. These idle people, considered discouraged workers, have mostly upper secondary or tertiary education and live in urban areas.

2.52 ***Environmental degradation and natural resource use***. The country and many of its people are dependent on natural resources such as grasslands, soils, forests, air and water, yet the quality of these is eroding even as their contributions to the public and shadow economies are increasing. This is a threat both in the short and long term for the country's economic growth as the costs of environmental degradation in terms of labor and land productivity, biodiversity, tourism and government revenues as well as public health related expenditures continue to raise. Existing empirical and anecdotal evidence clearly indicates that illegal logging and wildlife trade, the mining sector, particularly artisanal mining, water and air pollution are responsible for the increasing economic costs of environmental degradation. A further discussion of this and its long term implications and policy recommendations is provided in Chapter 4 of this Economic Report.

[43] According to the Doing Business Database, and the Growth Competitiveness Index for 2005 minimum wages and firing costs are low, and temporary contracts are permitted in Mongolia.

2.53 ***Finally, the macroeconomic environment has been stable and as long as it remains so will not be a binding constraint to growth.*** Monetary and fiscal policies have insured macroeconomic stability in recent years and have not been a constraint to growth. In 2005 inflationary pressures accelerated due to a rise in fuel and meat prices and administrative price adjustments in utilities. Core inflation rose sharply, and Mongolia's inflation rate jumped from 8 percent in 2004 to 13 percent in 2005. Inflationary pressures are expected to ease up in 2006, but monetary liquidity has remained loose. Although the Bank of Mongolia (BoM) stepped up the issuance of central bank bills to mop up excess liquidity, it purchased gold from mining companies and monetized US$195m worth of gold by printing local currency in 2005.[44] The key challenge will be to maintain macro-stability over the long-term and reduce the economy's vulnerability to international commodity price fluctuations. Chapter 5 will discuss these issues and provide policy recommendations for maintaining macroeconomic stability through appropriate fiscal policies, especially those affecting the composition of public spending programs, public borrowing and debt management policies, and improve accountability in the use of public funds (governance considerations).

[44] Since 1994 BoM started buying gold to support the development of the national gold sector.

3. ECONOMIC DIVERSIFICATION IN A CHANGING WORLD

In order to ensure that the Mongolian economy continues to grow by diversifying its non-mineral exports, enter new markets (at home and abroad) and create jobs, it is essential to extract higher value-added from its livestock herd and to motivate firms to provide additional products/services to improve quality and efficiency. Small and medium enterprises (SMEs) could provide much useful support, for example, in water well development/maintenance, fodder production, product quality control, product development, animal breeding and health, insurance, and other financial services. Development of new sources of export earnings will need to work around transport constraints. Rail transport will likely remain useful for bulk cargo, while the gestation lags involved with infrastructure development imply that truck transport will be problematic in the next few years for anything except low-value products. Hence, the focus should be on high-value niche products suitable for air cargo, tourism, and "knowledge" products such as software development. To facilitate these possibilities, Mongolia's investment climate should feature ease of business entry, exit and ongoing regulation; a fair, transparent, and pro-growth tax system; good access to finance; enhanced education/skills; and better infrastructure.

3.1 The discussion in the previous two chapters suggested that Mongolia's future economic development will depend on sustaining and enhancing traditional sectors, particularly mining and livestock, while nurturing new sources of growth and export earnings. While the growth diagnostics exercise helped us identify the "binding constraints" to broad-based growth in Mongolia today, it is now imperative to look at how these constraints need to be alleviated. This chapter looks deeper into the issue of economic diversification and provides policy recommendations on how the share of the non-mining sector can be increased in the coming years. In doing so, it also will show how some measures will have a beneficial effect towards improving private sector development across the board, including in mining sector activities.[1] This chapter also highlights that potential vulnerabilities and will recommend policy measures to help sustain (and hopefully augment) the currently observed high export earnings growth trajectories in Mongolia.[2]

CURRENT ISSUES

3.2 ***Mongolia's export sector remains overly dependent on mining.*** Mining has accounted for 50-70 percent of Mongolia's annual earning from commodity exports since 1999 (Table 3.1). The tripling of mining revenues since 1999 mainly reflects a 130 percent rise in copper prices, a doubling of gold production, and a 60 percent rise in gold prices.

[1] Chapter 5 of this report will look at the issues related to the Mongolian mining sector and natural resource management issues in more detail.

[2] During 1999-2005, annual average growth rates for Mongolia's export earnings have exceeded 25 percent.

Table 3.1: Mongolia's Export Earnings, 1999-2005

(USD millions)

	1999	2000	2001	2002	2003	2004	2005
Mining:							
Copper concentrate	119.2	160.3	147.9	140.2	163.7	284.3	326.2
Molybdenum concentrate	9.0	6.2	5.1	10.1	15.0	20.0	46.7
Fluorite concentrate	16.8	19.3	19.8	17.0	15.0	11.4	24.7
Gold	95.9	69.7	74.7	117.6	157.3	239.9	331.4
	240.9	255.5	247.5	284.9	351.0	555.6	729.0
Sawed wood	4.9	0.3	0.1	0.0	0.0	0.0	0.1
Cashmere:							
Cashmere tops	2.2	0.6	0.3	0.9	1.8	1.1	1.1
Cashmere, de-haired	45.9	54.5	55.0	30.5	25.7	44.1	52.8
Cashmere garments	7.8	13.0	11.6	12.8	15.6	33.1	17.5
Cashmere, greasy/raw	14.4	21.9	0.9	0.9	1.1	0.6	0.3
	70.3	90.0	67.8	45.1	44.2	78.9	71.7
Other goods:							
Textiles	18.4	73.2	44.2	18.8	37.4	96.5	42.3
Camel wool, raw	1.7	1.7	2.2	0.7	0.7	0.7	1.9
Skin and hides	23.9	34.9	16.2	11.3	6.1	5.9	3.0
Leather goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sheepskin coats	0.1	0.2	0.3	0.1	0.2	0.2	0.5
Carpets	0.9	1.4	0.9	0.9	0.0	0.0	0.0
Meat	13.2	15.8	18.5	20.5	15.7	13.2	10.1
Scrap metal	5.6	5.2	4.0	3.5	3.7	8.7	8.3
Other	74.2	57.5	121.6	137.9	141.1	93.8	197.9
Goods sub-total	454.1	535.7	523.3	523.7	600.1	853.5	1,064.8
Tourism	5.8	32.8	39.3	138.0	143.0	185.1	176.8
Total export earnings	459.9	568.5	562.6	661.7	743.1	1,038.6	1,241.6

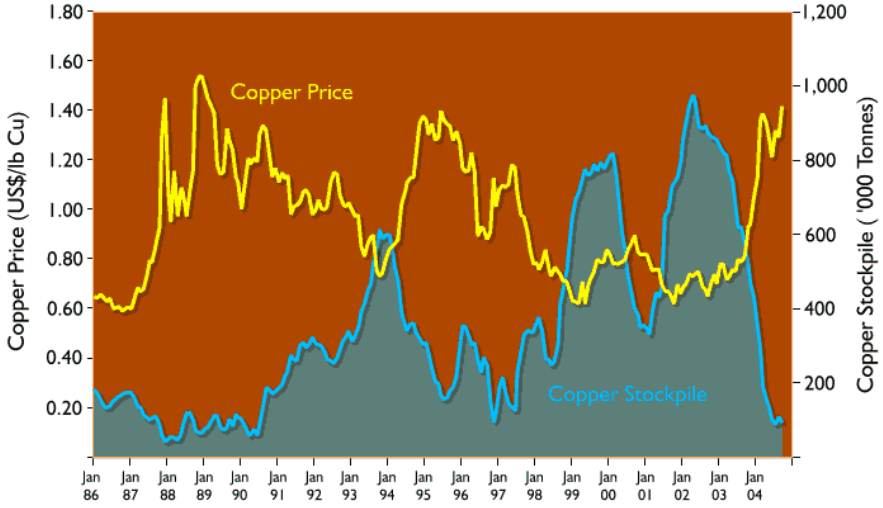
Source: Mongol Bank; SIMA.

3.3 ***Export earnings are vulnerable to minerals price shocks.*** Copper prices, for instance, have followed 4-7 year cycles since the mid-1980s, with prices typically falling more than 50 percent from peak to trough (Figure 3.1). If recent copper prices represent a new high, a new downturn could lead to a 15 percent drop (assuming no change in output) in overall revenues from export goods. Gold prices can drop 30 percent from peak to trough (Figure 3.2), as happened in 1996-2000. A similar downturn could (again assuming no change in output) reduce Mongolia's export earnings *by 10 percent.*

3.4 ***Rural livelihoods remain overly dependent on low-value livestock products.*** Livestock-related products (e.g., cashmere, skin and hides, meat) accounted for only 8 percent of Mongolia's export product revenues in 2005. However, the livestock-dominated agriculture

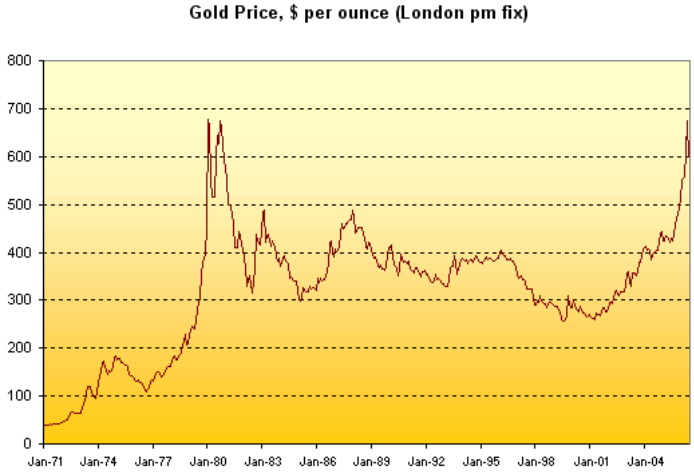
sector still accounts for 40 percent of employment. For rural households, livestock are an important source of income, jobs and food security, and wealth accumulation.

Figure 3.1: Copper Prices and Stockpiles, 1986-2005



Source : www.equinoxminerals.com/whycopper.asp

Figure 3.2: Long-term Behavior of Gold Prices 1971-2005



Source: www.goldprice.org/30-year-gold-price-history.html

3.5 ***The livestock sector faces multiple vulnerabilities.*** These include climate and disease. For instance, d*zud* killed 10 million livestock in the period 1999-2002. *Dzud*-related livestock losses were partly responsible for the 50+ percent reduction in export sales of de-haired cashmere between 2001 and 2003. An outbreak of hoof and mouth disease, which resulted in restrictions on meat exports, contributed to an 82 percent drop in export prices for meat in 2003 (Figure 3.3). These problems reflect the lack of an adequate support structure for Mongolia's livestock sector (e.g., fodder production, well maintenance, veterinary health surveillance and extension services). Of course, sector vulnerabilities will not automatically result in additional shocks. Analysis of developing countries over the past three decades

indicates that "commodity pessimism" is not always justified.[3]

Figure 3.3: Export Prices for Mongolian Meat Have Been Impacted by the Outbreak of Diseases

Source: Mongol Bank

3.6 ***Persistent export concentration may also result in slower growth.*** Mongolia's export sector is less diversified than such other land-locked countries as Kazakhstan and the Kyrgyz Republic, and far less diversified than China. Among 100 developing countries, Mongolia is the 37th least diversified. A World Bank study of Latin American economies—including such minerals powerhouses as Chile, Brazil, Peru, Bolivia, and Venezuela—concluded that "the evidence is clear: concentration reduces subsequent economic growth." "A 1 percent increase in the concentration of exports is associated with a 0.5 percent decline in the growth rate of real-GDP per capita." Only a fraction of this is explained by the correlation between export concentration and macroeconomic volatility.

3.7 The main factor seems to be that high export concentration is typically correlated with low incidence of intra-industry trade (i.e., the share of total trade consisting of imports and exports in the same product class). Driven by productivity gains, product development, and product differentiation, intra-industry trade is correlated with the pace of economic development. Additional analysis shows that intra-industry trade is positively correlated with higher levels of education, higher trade/GDP ratios, and lower transport/logistics/customs costs.[4]

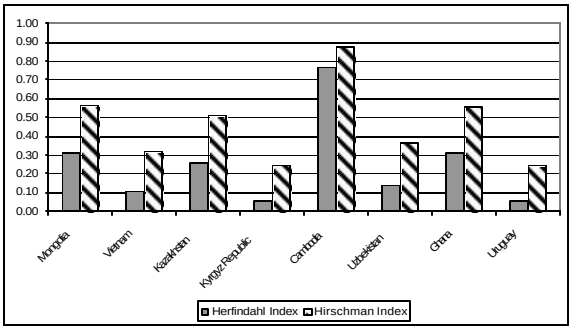
DO MONGOLIAN FIRMS INNOVATE?

3.8 Diversification of the productive structure requires "discovery" of an economy's cost structure.[5] Firms must experiment with new product lines, adapt new technologies from abroad to local conditions, and "discover" which products they can produce at low enough cost to be profitable and competitive. Given Mongolia's abundant land and mineral resources

[3] Federico Bonaglia and Kiichiro Fukasaku, "Export Diversification in Low-Income Countries: An International Challenge After Doha," OECD Development Center working paper #209, June 2003, p.18.
[4] World Bank, *From Natural Resources to the Knowledge Economy: Trade and Job Equality*, Latin American and Caribbean Studies, 2002, pp. 38-44.
[5] Hausmann and Rodrik (2004).

relative to its population size and land area, the country has a natural comparative advantage in industries that use intensively land and natural resources. Mongolia's current export base is consistent with its comparative advantage. Since 2000 the share of ores and minerals in total exports has stayed above 40 percent, the share of primary goods excluding ores and minerals has been around 15 percent, and approximately 50 percent of manufactures have been metals.[6] However, as a result of its specialization in mining and primary products, Mongolia has a low-degree of export diversification. Mongolia is less diversified than its comparators, which include other land-locked, resource-rich countries, except Cambodia (Figure 3.4)

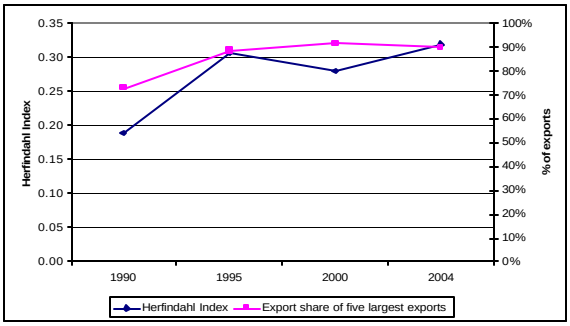
Figure 3.4: Degree of export diversification is relatively low in Mongolia…



Source: World Bank Database on export diversification (PRMED). 2004 data.

Note: The higher the Herfindahl and Hirshman indices, the lower the degree of diversification.

Figure 3.5: …and has been declining further.



Source: Staff estimates based on export diversification data (World Bank, PRMED). 2004 data.

3.9 Since 1990 Mongolia's dependence on primary good has grown and the top five exports in terms of value have claimed an ever increasing share of exports, which in 2004 was 90 percent (Figure 3.5). The manufacturing base is narrow as well. In 2005, it comprised of three product groups—metals, which accounted for 61 percent of manufactured exports; textiles (18 percent); and apparel (13 percent). All remaining products—including metal products—add up to just 8 percent of exports.[7]

3.10 *A narrow manufacturing base does not imply that Mongolian firms do not attempt to export new products. In fact, they do.* One way to assess the level of entrepreneurial effort or "self discovery" in Mongolia is to look at the number of new exported goods. When measured at the 4 digit level of the Harmonized System the number of exported products has grown from 351 in 2002 to 462 in 2005 – an increase of 32 percent. The increase could have been much higher had Mongolian firms managed to lower the number of discontinued exports and had they not failed to continue exporting the majority of their new export lines. According to UN COMTRADE database every year during the period 2002-06 Mongolia exported on average 135 new product lines, but discontinued 98 products, of which 62 percent were new exports (Table 3.2).

3.11 While manufactured goods represented a large share of new exports, they also represented a large share of new exports discontinued the following year. In 2003 and 2004

[6] Source: Database on export diversification (PRMED).
[7] See also UNIDO (2002) – a report on Mongolia's manufacturing sector.

this share was 83 percent and 72 percent, respectively. This suggests that while some Mongolian firms attempt to "innovate", they fail to market these products abroad. Table 3.2 displays the lists of discontinued new manufactured products in 2004 and 2005. The process of "self-discovery" has been hampered by a variety of negative coordination externalities.

Table 3.2: Indicators of Innovation, Mongolia
(number of firms)

	2002	2003	2004	2005
Exported goods	351	393	436	462
New exports		120	145	139
New manufactured exports		99	104	
Discontinued exports		78	102	113
New exports discontinued next year		63	71	
New manufactured exports discontinued next year		51	51	

Source: Staff estimates based on UN COMTRADE data, HS 4 digits.

3.12 Although economic diversification of a resource based economy poses many challenges, successes in a number of countries show that it is possible to use natural resources to diversify within the natural resource sector as well as move into new sectors. In Finland this happened with the move of Nokia, which was establish in 1865 and by the early twentieth century was the country's largest pulp and paper mill, to one of the largest telecommunications companies in the world.[8] The existence of a secure market in the former Soviet Union provided a strong incentive to increase capacity and diversify Nokia's product lines. In 1962, Finish Cable Works—a subdivision of Nokia—developed a prototype radiotelephone at the request of the army and in competition with Finland's leading electrical engineering firms, Salora and Televa, and the Swedish producer, Sonab. In 1966 Nokia, Salora and Televa were formally merged and divided into four divisions: paper, cable, rubber and electronics. The electronics division was the smallest and non-profitable for years, but Nokia's executives ensured that it had access to the latest technology. By the early 1970s the electronics division expanded with the public radiotelephone system and the marketing of foreign computer equipment in the domestic market. By the late 1970s, Nokia had learned to develop its own computer terminals, cash registers and a portable computer that competed well with Apple in the Nordic markets, and the new CEO of the company had decided to transform Nokia into a leading high tech company. The leadership of the company was aware that Nokia lacks necessary skills and experience to compete with established American, European and Japanese incumbents in the global electronics market. Its ambition and commitment to eventually compete in all markets provided an incentive to form alliances with American and European companies. These alliances were essential to Nokia's transformation from a raw material-based to a knowledge-base high-tech company. Another important factor was an aggressive human-resource development program that encouraged work abroad in foreign affiliates. The company's leadership worked with the government to modernize the public education system and to support broad international student-exchange programs, continuous lifelong learning, and close collaboration between industry and academia.

[8] Source: de Ferranti, Perry, Lederman and Maloney (2002).

Table 3.3: New Manufactured Exports Discontinued in 2004 and 2005

HS No.	2004	HS No.	2005
3208	Paints and varnishes	3214	Glaziers' putty, grafting putty
3306	Preparations for oral or dental hygiene	3302	Mixtures of odoriferous substances
3402	Organic surface-active agents	3305	Preparations for use on the hair
3405	Polishes and creams, for footwear	3502	Albumins
3603	Safety fuses; detonating fuses	3916	Monofilament
3813	Preparations and charges for fire-e	3919	Self-adhesive plates, sheets, film
4008	Plates, sheets, strip, rods and pro	3921	Other plates, sheets, film, foil
4410	Particle board and similar board	4005	Compounded rubber
4411	Fiberboard of wood or other	4404	Hoopwood; split poles; piles
4503	Articles of natural cork.	4601	Plaits and similar products
4602	Basketwork, wickerwork and other	4904	Music, printed or in manuscript
4818	Toilet paper and similar paper	4909	Printed or illustrated postcards
5110	Yarn of coarse animal hair	4910	Calendars of any kind, printed
5804	Tulles and other net fabrics	5113	Woven fabrics of coarse animal hair
5911	Textile products and articles	5509	Yarn (other than sewing thread)
6005	Warp knit fabrics	5601	Wadding of textile materials
6006	Other knitted or crocheted fabrics.	5801	Woven pile fabrics and chenille fabrics
6303	Curtains (including drapes)	5805	Hand-woven tapestries of the type
6401	Waterproof footwear with outer sole	5808	Braids in the piece
6804	Millstones, grindstones, grinding w	5905	Textile wall coverings
6805	Natural or artificial abrasive powder	6112	Track suits, ski suits and swimwear
6813	Friction material and articles	6213	Handkerchiefs
6901	Bricks, blocks, tiles and other	6402	Other footwear with outer soles
6910	Ceramic sinks, wash basins	6507	Head-bands, linings, covers, hats
7004	Drawn glass and blown glass	6601	Umbrellas and sun umbrellas
7315	Chain and parts thereof, of iron	7001	Cullet and other waste and scrap
7317	Nails, tacks, drawing pins,	7010	Carboys, bottles, flasks, jars, pot
7325	Other cast articles of iron or steel	7116	Articles of natural or cultured pearls
7405	Master alloys of copper.	7213	Bars and rods, hot-rolled
7503	Nickel waste and scrap.	7314	Cloth (including endless bands)
8112	Beryllium, chromium, germanium, van	7508	Other articles of nickel.
8207	Interchangeable tools for hand tool	8305	Fittings for loose-leaf binders
8208	Knives and cutting blades, for machines	8417	Industrial or laboratory furnaces
8434	Milking machines and dairy machinery	8437	Machines for cleaning, sorting
8442	Machinery, apparatus and equipment	8438	Machinery
8445	Machines for preparing textile fibers	8461	Machine-tools for planning, shaping
8459	Machine-tools	8503	Parts suitable for use solely or pr
8504	Electrical transformers, static con	8510	Shavers, hair clippers
8532	Electrical capacitors, fixed, variable	8518	Microphones and stands
8537	Boards, panels, consoles, desks, ca	8523	Prepared unrecorded media for sound
8540	Thermionic, cold cathode or photo-cathode	8527	Reception apparatus for radio-telephone
8705	Special purpose motor vehicles	8535	Electrical apparatus for switching
8801	Balloons and dirigibles; gliders	8543	Electrical machines and apparatus
8901	Cruise ships, excursion boats	9023	Instruments, apparatus and models
9001	Optical fibers and optical fiber	9029	Revolution counters
9006	Photographic	9104	Instrument panel clocks and clocks
9208	Musical boxes, fairground organs	9110	Complete watch or clock movements
9307	Swords, cutlasses, bayonets, lances	9205	Other wind musical instruments
9601	Worked ivory, bone, tortoise-shell,	9303	Other firearms and similar devices
9609	Pencils	9611	Date, sealing or numbering stamps
9618	Tailors' dummies and other lay figures	9614	Smoking pipes

Source: UN COMTRADE data.

3.13 It is also possible not only to use mineral wealth to diversify within and out of mining, but to start exporting mineral know-how. Australia's Broken Hill Proprietary Company (BHP) offers an example of how a firm can achieve this. BHP was floated in 1985 after a rider on a sheep station in New South Wales discovered lead and silver and formed a syndicate with other local workers, and leased the mine. Over the years BHP diversified into manufactured steel products, coal and iron ore, petroleum, and shipping and shipbuilding. It became a modern conglomerate with vertical control from mining to blast furnaces to wire rope factories to shipping lines. Critical to its success has been the emphasis on building mining expertise. Australia began recruiting engineers and metallurgists in 1886. The Sydney Mechanics Institute was established in 1843, followed by Sydney University in 1850, School of Mines in Ballarat and Bendigo in 1870 and 1873, respectively, the Sydney Technical College in 1878, and the University of New South Wales in 1949. These institutions rested on a commitment to universal education beginning with the Victoria Education Act of 1872. Australia now leads the world in mineral detection technology embodied in their "transparent earth" initiative, in mine-closing techniques, and mining-related environment knowledge. Cutting-edge know-how enabled BHP to discover and undertake the development of Chile's largest producer of copper.

SECTOR PERSPECTIVES

3.14 The Government has considered giving priority to various sectors: mining, meat, carpets and wool, cashmere, skins and hides, textiles, tourism, forestry and wood, petroleum, metallurgy, and information technology.[9]

3.15 ***Priority for some sectors is questionable.*** For instance, as the Government's own analyses indicate, the textile sector suffers from low labor productivity, lack of direct customer access, and other issues that leave it at a major disadvantage vis-à-vis China. The wood sector's potential is said to be constrained by insufficient forest reserves.[10] At first glance, efforts to build downstream linkages and add value close to the mines might seem to make sense. According to a comprehensive study of mining clusters in Latin America, however, "some minor examples may be found of where this has worked well, but as a proposal of strategy it does not seem wise."[11]

3.16 ***Cashmere's prospects should be viewed dispassionately.*** The government should reassess its efforts to raise cashmere output, encourage domestic processing of raw cashmere, and support production of cashmere garments in light of recent experience and market realities.

- Little or no taxes or user fees (e.g., for grazing or water) have encouraged herders to increase herd sizes beyond sustainable levels.
- Various measures have been attempted to raise the quality of raw cashmere. But herders still favor greater volume of raw cashmere, at the expense of quality. Low-quality, coarse

[9] Ministry of Industry and Trade, "Mongolia Industrial Sector Development Strategy: Priority Sector Policy," undated; and supporting exhibits (processed).
[10] Ibid.
[11] Rudolf M. Buitelaar, "Mining Clusters and Local Economic Development in Latin America," http://www.carleton.ca/economics/seminar%20papers/Buitelaar-Nov1-2001.pdf, p. 17.

cashmere is becoming the norm for Mongolia. Hence, access to more lucrative markets is limited. Improving the quality of the national herd would take time and be very challenging as the country does not have a strong animal breeding industry in place. A more promising route would involve the strengthening of linkages between processors and large scale herders (which are increasing in number) and well-performing herder cooperatives and NGOs. Improving quality will require introduction of improved breeds, improved nutrition and introduction of more rigorous grading systems. [12] Other observers are skeptical about the prospects for quality improvements, however, suggesting that revenue-maximizing herders will continue to favor quantity over quality. [13]

- Despite taxes on the export of raw cashmere and consolidation and downsizing of cashmere processors since 1997, domestic processors still operate below 50 percent of capacity while about half of Mongolia's raw cashmere is smuggled to China for processing.
- Changes in the world garment industry have made it even more difficult for Mongolia's garment producers to compete. Costs and prices have been driven down, while the fashion cycle has accelerated from four seasons to 8-12 style changes for some brand names and retailers. Bargaining power in the value chain has shifted from producers and retailers to brand name holders, who have withdrawn from production by outsourcing to contract producers. Despite decades of subsidies, even Chinese cashmere garment producers have so far been unable to integrate forward into international distribution channels—much less to develop an internationally recognized brand name. This USAID analysis concludes that it is too late for Mongolian producers to integrate into international distribution or develop a brand (and hence should receive no special incentives), but that Mongolia's cashmere industry could forge alliance with world-class players seeking to counterbalance Chinese producers. Modest reforms that do not specifically target the industry are held out as offering the best hope for Mongolia's cashmere sector. [14]

3.17 ***Overland transport is suitable only for bulk and "commoditized" products.*** In today's world economy, competition is often not just between products but between global supply chains. Timeliness of delivery, predictability, and in-transit visibility may determine product competitiveness. Manufactured goods with tenuous links to global supply chains may become commodities that can compete only on the basis of price.

3.18 Use of trucks to access seaports is a non-starter. [15] Except for bulk or commodity products, rail transport is not viable for reasons of cost and service quality. The cost of shipping a 20-foot container by rail from Ulaanbaatar to Tianjin (about $1,037) is double the

[12] World Bank, *From Goats to Coats: Institutional Reform in Mongolia's Cashmere Sector*, report 26240-MOG, 19 December 2003; and subsequent reporting.

[13] USAID Economic Policy Reform and Competitiveness Project, "A Value Chain Analysis of the Mongolian Cashmere Industry," May 2005.

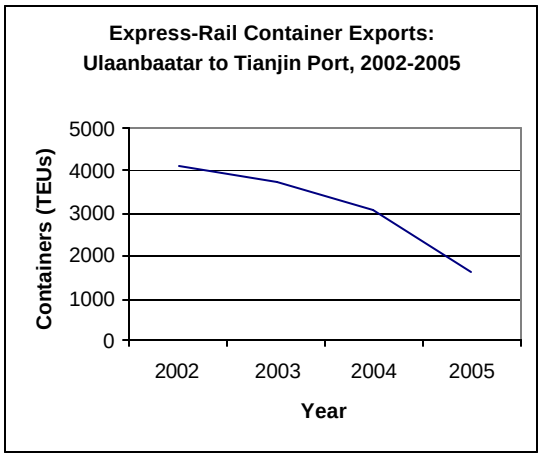
[14] These measures include a reduction in tax rates to 15 percent, accelerated depreciation, and tax loss carry-forwards; lower interest rates; privatization and withdrawal of State support for Gobi Cashmere. USAID Economic Policy Reform and Competitiveness Project, "A Value Chain Analysis of the Mongolian Cashmere Industry," May 2005.

[15] The nearest seaports at Tianjin (1700 kilometers) and Votoschney (4500 km) are beyond the maximum efficient range for trucking. In any case, the road from Ulaanbaatar to China will not be fully paved for several more years and Mongolian trucks are still denied access to China. The road to Russia is paved, but Mongolian truckers face delays and uncertainties entering and operating in Russia.

cost of trucking a container from Hohot, Inner Mongolia to Tianjin.[16] The bulk of China's low-cost manufacturing base is located even closer to seaports and thus enjoys even greater transportation cost advantages. Many rail service reliability issues are well-known. A rail gauge change at the China border necessitates a time-consuming axle adjustment or transfer of containers, while customs and quarantine inspections add further delays and uncertainty.[17] After crossing into China, additional issues will likely arise. While noting that rail is a lifeline within China for moving coal and other bulk goods, a McKinsey study concludes that China Rail "is unsuited for moving most finished goods because of extensive delays, little flexibility in routes, and a lack of genuine service orientation." In addition, ports in China "often lack modern and efficient rail sidings, making it impossible to load goods directly into wagons and from wagons to ships".[18] Examples of China Rail's lack of service orientation include a lack of real-time tracking and tracing of cargoes, estimates of arrival time, or reports of en-route service failures".[19]

3.19 A dramatic fall in rail-borne container traffic between Ulaanbaatar and Tianjin highlights these supply chain issues. In May 2002, twice-weekly container-express train service began between the two cities. Advertised at 3.1 days,[20] actual transit times have ranged from 4 to 12 days,[21] an unacceptable level of reliability for many manufactured goods. From its 2002 baseline, container traffic has seen cumulative declines of 8 percent in 2003, 25 percent by end-2004, and 60 percent by end-2005 (Figure 3.6).

Figure 3.6: Rail Cargo Traffic Has Been on the Decline



Source: International Freight Forwarding Center of Mongolian Railways.
(N.B. 2002 volume has been annualized based on 7 months data.)

3.20 ***Development of higher-value "niche" exports and Mongolia's tiny air cargo sector make sense.*** Industry experts indicate that any product worth $3-5 per kilogram may be suitable for air cargo. Demands for more reliable delivery may explain recent 100-150 percent

[16] Staff estimates, based on World Bank, *Mongolia Investment Climate and Trade Integration*, January 2006; and World Bank, *Governance, Investment Climate, and Harmonious Society: Competitiveness Enhancements for 120 Cities in China*, October 2006.
[17] World Bank, 2006a.
[18] Jonathan R. Woetzel, *Capitalist China: Strategies for a Revolutionized Economy*, (Wiley, 2003), p. 85.
[19] World Bank, 2004, p. 25.
[20] International Freight Forwarding Centre of Mongolian Railways.
[21] World Bank, 2006a, p.

increases in air cargo shipments from Ulaanbaatar to selected cities.[22] Despite this growth, Mongolia's air cargo shipments are negligible compared with those from Latin America and Africa, which have seen huge increases in the air shipment of perishable products (Box 3.1). Some countries provide subsidies to encourage use of air cargo to develop export markets for perishable products.[23]

Box 3.1: Air Cargo Exports of Perishables from Developing Regions

* Latin America: Of the current northbound air cargo shipments of 721,000 tons from Latin America, about 58 percent are perishable products – including about 175,000 tons of fish, 145,000 tons of flowers, and 100,000 tons of fresh fruits and vegetables. Major producers: Panama, Ecuador, and Chile for fish; Costa Rica, Columbia, Ecuador, and Peru for flowers; and Columbia, Peru, and Chile for fresh fruits/vegetables.

* Ethiopia: Meat exports (lamb to Dubai, Cairo, Jeddah; beef to West Africa) make use of extensive cold storage facilities at Addis Ababa airport. Air shipments of cut flowers total about 23,000 tons per year, two-thirds of which are flown out during the December-April peak season. Depending on the time of year, air service includes a daily DC-10 (65 tons) to Brussels and a daily 757 (36 tons) to Rome.

* Uganda: Annual air shipments of fish total almost 5000 metric tons, of which about 70 percent ends up in Europe and 30 percent in the U.S. or Japan. Average value is $3.20 per kilogram.

* Tanzania: Air cargo exports of perishable goods (fresh vegetables, flowers, seafood) have recently experienced 54 percent growth (compounded), from over 221,000 tons in 2001 to over 1,259,000 tons in 2005.

Source: H. Bofinger, "Preliminary Results on Air Cargo Research," undated, processed.

3.21 While mining is inevitably a priority sector, more attention should be paid to opportunities for horizontal diversification into mining support, knowledge management, and related infrastructure. Large mining operations require many supporting goods and services, including catering, trucking, equipment repair, chemicals supply, and utilities. International mining firms, however, insist that local suppliers meet international quality standards at acceptable cost. Knowledge management opportunities include geological and environmental management services. Local learning of particular environmental issues (e.g., water management in the desert, treatment of residues) may have wide applications in other countries. [24] Canada and Australia are good examples of countries that have successfully exploited their accumulated knowledge about geology, mining, and environmental protection. Mining can also stimulate investment in and development of such infrastructure as roads, railroads, power, water, and other utility services. The development of transport infrastructure in remote mining areas may also support development of specialty tourism, such as mining tourism and geological-interest tourism.

3.22 ***Turning to meat***, it is necessary to consider both bulk and specialty meat products. Efforts to restore the quality (and pricing) for bulk meats are needed. Meat exports have decreased sharply, from 23,200 tons in 2002 to 7,800 tons in 2005. As shown earlier (Figure 3.1), unit prices for meat exports dropped more than 80 percent in 2003. This deterioration

[22] Air cargo shipments from Ulaanbaatar to Seoul have increased from 149 tons in 2004 to 392 tons in 2006 (annualized). Those to Moscow have increased from 78 tons in 2004 to 151 tons in 2006 (annualized), according to data from Mongolia's Civil Aviation Authority.

[23] For instance, the king of Thailand reportedly pays for regular air cargo shipments of Thai fresh produce and other food items to specialty grocers in Europe in order to support development of a market for such products.

[24] Buitelaar, p. 17-9.

reflects the general low-quality of meat production in Mongolia. Access to export markets is frequently restricted by a number of sanitary and phyto-sanitary (SPS) issues, including the presence of a number of livestock diseases, such as foot and mouth disease (circulating in Mongolia since 2000, after a 25-year absence); sporadic outbreaks of anthrax; avian influenza, in wild birds; and the human form of brucellosis. These diseases severely restrict export opportunities for Mongolian meat. Where countries are willing to import (such as Russia), prices are very low in most cases. The increase in disease outbreaks is partly due to reduced animal health surveillance. The linkages between now-private veterinary services and public agencies need to be strengthened. While nationwide control of animal diseases is a good medium-term objective, short-term efforts to create disease-free zones would help.

3.23 Mongolian canners appear to have made some inroads into pet food markets in Japan and South Korea. The pet food market is estimated at about $3 billion in those two countries and almost $50 billion worldwide. One assessment suggests that Mongolian suppliers should, at a minimum, seek out foreign partnerships; achieve or maintain conformity with good manufacturing standards (GMS); and encourage large foreign producers to locate processing plants in Mongolia to service East Asia.[25]

3.24 ***In addition, opportunities for higher-value meat exports should be explored.*** Examples include high-quality horsemeat for Japan and lamb for Persian Gulf markets. While these are promising markets, early forays have highlighted cultural, SPS, and supply chain issues (Box 3.2). Since, as noted earlier (Box 3.1), several African countries have successfully used air cargo to ship meat or fish to markets in the Middle East, Europe, and Japan, it should be possible for Mongolia to develop similar access.

Box 3.2. Issues for Higher-Value Meat Exports

* *Japan:* Since the mid-1990s, a Japanese firm based in Mongolia has been exporting high-quality fresh horse meat served as expensive *basishi* (horse meat sushi) in restaurants in Japan and frozen horse meat for barbeque. *Basishi* can sell for as much as $90 a kilogram in Japanese restaurants. Consumer interest is high because horses are not known to be susceptible to BSE. An inability to deliver consistent supplies to Japan, however, is a major impediment to expanded exports. Several Japanese buyers for chain restaurants and supermarkets have inquired about larger orders that would be several multiples of current volume. These orders could not be accepted due to the firm's inability to meet exacting requirements, including for reliable air shipment. While the firm has discussed expanded air shipments from Ulaanbaatar to Tokyo with MIAT, MIAT has been disinclined to negotiate competitive rates.
* *Persian Gulf* investors have explored the export of tasty range-fed *halal* lamb to the Persian Gulf region, in order to fill a large deficit of light-weight lambs not available from traditional suppliers in New Zealand or Australia. One issue is the development of *halal* certification systems, facilities, and processes in Mongolia. Supply chain reliability is another issue. A test trans-shipment by rail through China to Tianjin's port in May 2005 is said to have encountered "extraordinary difficulties" at the border.

Source: Nathan Associates.

3.25 Development of supporting services for livestock would reduce livestock sector vulnerabilities, while raising and diversifying rural incomes. Future growth will depend on increasing productivity and value adding activities, rather than increasing livestock numbers, which are already at the limits of sustainability. Degraded natural pasture land (possibly

[25] Nathan Associates, "Mongolia Meats and Hides Industries Competitiveness Study – International Market Review," July 2005, pp. 22, 38.

compounded by climate change), competition from overseas markets and the mitigation of production risks will be key challenges in the future. To respond, the focus will be on increasing commercialization of the sector, including improving quality of produce. Opportunities exist for intensification of production where market and natural conditions are conducive. In marginal areas, extensive, semi-nomadic herding will remain the dominant form of production. For international markets, the focus will be on improving quality, plus identifying niche markets.

3.26 Indeed, a key thrust of government strategy for livestock is the intensification of production. Around Ulaanbaatar are a growing number of intensive or semi-intensive livestock farms that cater to urban demands for fresh produce (e.g., beef, pork, poultry, dairy) and substitute for imports. Returns from such farms can be high, so long as several impediments are overcome, including the cost of borrowing; access to breeding services; access to feed and fodder; access to secure land rights; access to high-quality veterinary services; access to information/knowledge; and a still-fragmented processing sector.

3.27 Additional income-producing and diversification opportunities lie in such livestock support activities as fodder production, well maintenance, animal health surveillance, animal husbandry extension services, veterinary medicine (also an export possibility), and quality control.

3.28 For environmental as well as economic reasons, Mongolia should focus more on tourism yield and less on tourism numbers. Mongolia's recent growth in international arrivals almost matches the growth rates for such other specialty destinations as Bhutan, Nepal, and Cambodia (Table 3.4). For 2004, Mongolia's international arrivals were up 42 percent from 2002 and 414 percent from 2000. Tourism creates its own sustainability issues. Deleterious impacts from tourism include waste deposits and water pollution around tourist accommodations; steppe erosion, from cross-country vehicles; and poaching of rare and endangered species.

3.29 Mongolia lags behind other specialty destinations in terms of tourism yield. Between 2002 and 2004, receipts-per-arrival grew only 8 percent in Mongolia, versus 18 percent in Thailand and 58 percent in Nepal. In terms of actual receipts, Mongolia's $615 per arrival is just 45-60 percent of comparable amounts for such Asia destinations as South Korea, Bhutan, and Taiwan, China. Greater appeal to high-end tourism would help. Specialties could include eco-tourism, cultural or historical tourism, or even mining tourism.

3.30 To encourage high-end tourism, it will be important to address negatives—some long-standing, others on the rise. While appreciating Mongolia's people, natural environment, and traditional culture, tourist surveys point to a number of problems relating to roads and travel conditions; taxi drivers; service standards and quality of accommodations; quality and variety of food; general hygiene; language barriers; sporadic environmental degradation; alcohol-related incidents; and crime. In a survey of tourists conducted during summer 2005, an astounding 13 percent of respondents indicated that they had been crime victims—including 1.6 percent who claimed to have been victims of a major crime. The scene of the crime was Ulaanbaatar in 92 percent of the cases—and, specifically, Narantuul Market in 36 percent of

the cases.[26]

Table 3.4: Tourism Trends, Selected Countries

	2000	2002	2004
Receipts (million US $)			
Bhutan	10	8	12
Nepal	158	104	230
Cambodia	304	454	604
Thailand	7,483	7,901	10,034
Taiwan, China	3,738	4,583	4,054
South Korea	6,811	5,919	6,053
Mongolia	36	130	185
International arrivals (thousands)			
Bhutan	8	6	9
Nepal	464	275	385
Cambodia	466	787	1,055
Thailand	9,579	10,873	11,737
Taiwan, China	2,624	2,978	2,950
South Korea	5,322	5,347	5,818
Mongolia	137	229	301
$ per arrival			
Bhutan	1,250	1,333	1,333
Nepal	341	378	597
Cambodia	652	577	573
Thailand	781	727	855
Taiwan, China	1,425	1,539	1,374
South Korea	1,280	1,107	1,040
Mongolia	263	568	615

Source: World Tourism Organization

3.31 ***Mongolia has some potential for offshore engineering.*** Software development for foreign clients is another diversification possibility suited to Mongolia's limited transport services and infrastructure, since requirements for physical shipment of goods are minimal. Mongolia's software sector is extremely small.[27] The Government has encouraged development of an IT park in the university district of downtown Ulaanbaatar, which now houses 40-50 companies, of which about 15 are incubator companies that have been selected by a competitive and transparent process and which receive free rent/utilities and subsidized internet links as well as some VAT exemptions on hardware. The IT park has begun asking resident firms to focus on software development outsourcing to Japanese firms to take advantage substantially lower cost for Mongolian programmers.

3.32 While Mongolia's software sector is extremely small, especially when compared with

[26] USAID, Economic Policy Reform and Competitiveness Project newsletter, February 2006.

[27] As of early 2005, Mongolia's entire information and communications technology (ICT) sector included about 5,900 workers, almost all located in Ulaanbaatar. Of these, about 4,000 worked in the telecommunications sector. Mongolian Information Development Association, *The Mongolian Information and Communications Technology (ICT) Workforce Demand Survey, 2005*, July 2005. Industry surveys indicate that Mongolia has about 350 software developers and that ten local universities now produce about 600 IT professionals a years, of whom about one-third go into software development.

its main competitors for the Japan market (Table 3.5) small size does not necessarily preclude successful development of some niche businesses. Industry experts suggest that chances of success would improve by targeting one or more specialized industries (e.g., mining, livestock) rather than more common industries (e.g., financial services, telecoms).

Table 3.5: Software Sector, Selected Countries

	China	Philippines	Vietnam	India
Employees	300,000	10,000	15,000 (1)	850,000
Revenue (2005)	$920 million	NA	NA	$17,300 million
Revenue per employee	$3,067	NA	NA	$20,353
Revenue from Japan (2005)	$557 million	NA	NA	NA
Monthly salary for new employees	$400	NA	$200	$400

Source: Gartner Research. (1) Employees are all software-related

Box 3.3. Prerequisites for Entering Japan Software Development Market

* Staff qualifications: Mongolian software development companies will need a mix of software architects, engineers, programmers, and quality-assurance testing staff. Training can range from 4-year university degrees to 2-year associate degrees. Vendors (e.g., Cisco, Intel, HP, IBM) may provide professional product-related training. It may be possible to partner with universities in Japan, India, China, and/or western countries. Accreditation in key languages (e.g., Java) and certification that IT professionals meet Japanese standards is essential.

* Processes will need to be robust. Japanese clients will expect Mongolian software developers to achieve CMMI (Capability Maturity Model Integration) Level 5 certification. CMMI is a process improvement model used by the software industry to measure the quality of a software development organization. Allowing time for audits and demonstrations, it should be possible for Mongolian software development firms to achieve CMMI Level 5 within 3 years.

* Intellectual property: Japanese clients will want to have high confidence that Mongolian software developers will protect both client confidential data and the intellectual property of client-specific business processes and the IP of the delivered software.

* Transportation: The main requirements are for reasonable air connections, a few comfortable and well-equipped hotels, and secure and reliable car service. Occasional disruptions in air service (e.g., due to weather) should not be a problem so long as first-class hotels can fully support the needs of business travelers. As some work for Japanese clients will also need to be done on-site, Mongolian staff will also need to respond within reasonable time frames to requirements to travel to Japan.

* IT infrastructure is critical. Software engineering sites and data centers need extremely reliable power supply. For instance, foreign firms operating in India may have a triple-redundant backup generator system. Mongolia would need very reliable high-bandwidth connectivity and large data storage and servers. A good export/economic development zone with duty-free import on such equipment would be useful.

* Language and cultural proficiency is required for all customer-facing employees – perhaps 10 percent of the software sector workforce oriented toward Japanese business. Read-only language proficiency should suffice for another 40 percent of this workforce. The former would require time and training in Japan.

Source: Industry interviews.

3.33 Beyond some industry specialization, software industry experts suggest that Mongolia's ability to develop software for clients in Japan will depend on technical certification of Mongolian staff and processes; safeguards for intellectual property (IP); adequate transport and IT infrastructure; and some language and cultural proficiency (Box 3.3). Citing India as a good example, software industry experts note that successful

development of Mongolia's software sector would require "islands" of consistency, rather than excellence everywhere.

3.34 According to the Government's own analysis, however, the Government could do a lot to support development of Mongolia's IT sector. This analysis maintains that monopolization of Mongolia's primary communications network by a state-owned company (MTC) "hinders the launch and development of new services" and that "the speed and capacity of the primary communications network is unable to meet the constantly increasing demand." The analysis also notes that additional work is needed on the legal framework to provide information security.[28] While preceding discussions have so far covered sectors identified by the Government as potential growth sectors, it is also worth considering other new and potential sources of growth.

3.35 ***The global market for natural foods, food supplements, and beauty products has been largely overlooked.*** By virtue of its large and relatively pristine geographic area and long experience with traditional medicines, Mongolia is well-placed to respond to the large and rapidly-growing world market for health-related foods and personal care products (Box 3.4). As of 2005, the combined Japan/South Korea/Taiwan market is estimated to be $13 billion, while the worldwide market could be as large as $85-100 billion.

Box 3.4. World Markets for Natural Personal Care Products and Health Foods/Supplements

One market survey sees a new and emerging market for "neutraceuticals" and "functional foods – natural, bioactive compounds with health-promoting, disease mitigating or medicinal properties." Market growth "is driven by an increasing consumer understanding of the link between diet and health, aging populations, rising health-care costs, and advances in food technology and nutrition research." Worldwide revenues for the functional foods and neutriceuticals were estimated to be almost $60 billion in 2001. Market growth has been especially rapid in the U.S., Europe, and Japan. Assuming 10-15 percent annual growth, the 2005 worldwide market would be $85-100 billion.

Another market survey sees especially rapid growth throughout East Asia's most developed markets:

* Japan: The current size of the nutritional supplements and health foods market exceeds $10 billion. "An aging population and a rise in health consciousness among the Japanese have resulted in a tremendous growth in the Japanese health foods market." By 2040, one-third of Japan's population will be over the age of 65. Currently the world's second largest market for dietary supplements (after the U.S.), the Japanese market "is poised for even greater growth in the future."

* Korea is the third largest Asian market for nutritional supplements, with a market size of about $2 billion. Of that, imports account for $432 million. Although already quite large, Korea's nutritional supplement market continues to see annual growth of 15 to 20 percent. This reflects a nationwide "well-being" craze.

* Taiwan: About 80 percent of the population uses nutritional supplements of some kind. The nutritional supplement market is expected to reach $770 million by mid-2005. Domestic production supplies only 25 percent of the local market

Sources: Agriculture and Agri-Food Canada; U.S. Department of Commerce, International Trade Administration

3.36 A variety of products from Mongolia that might find niches in this market are in various stages of development (Box 3.5). Reliable supply chain linkages (field-to-processor-to-overseas retailer) that preserve both nutritional value and shelf life and a high-confidence ability to meet demanding hygiene and health standards in overseas markets are prerequisites for success in this market. The typically high retail prices (and potential shelf-life constraints)

[28] Ministry of Industry and Trade, supporting exhibits, processed.

warrants reliance on air cargo as the normal mode for shipping specialty health-related and food products.

Box 3.5. Natural Products from Mongolia

A variety of local products (e.g., mare's milk concentrate, black goat extract, fungus tea, aloe skin lotion) have been identified as potential niche entrants into overseas health food and supplement markets.

Spring 2005 saw some progress on development of one such product—wild blueberry jam. Recent discussion about the potential for wild blueberry jam illustrates both the potential market for such products and the obstacles that would needed to be overcome to develop such products. In Japan, blueberries and blueberry preserves "are believed to have therapeutic properties and are known to the Japanese as the 'vision' berry." In Mongolia, around 180 hectares produce an estimated 320 tons of uncultivated blueberries each year. The berries mainly grow in Zavkhan, Kuvsugul, and Bulgan aimags. Currently, only about 50 tons is harvested and processed into final products, such as jams, juices, and liqueurs. Berries are harvested by local herders to supplement their livestock-related income. Logistical difficulties in bringing the berries to market are cited as the main reason why much of the crop remains un-harvested. In June 2006, Japanese buyers identified an immediate demand for 50,000 bottles (500gm) of jam, requiring 13 tons of berries. Mongolian jam producers would "need to implement enhanced quality control to ensure that they can meet the strict hygiene, sanitary, and health standards that Japanese consumers demand. In August 2006, a leading Japanese organic retailer contracted for 60,000 jars of wild blueberry jam, which are expected to appear on Tokyo and Osaka shelves in late 2006. Initial samples have attracted high consumer interest because wild blueberries (compared with cultivated blueberries) contain almost twice the amount of antioxidants. Antioxidants are believed "to alleviate the incidence of cancers, heart disease, and reduce the effects of aging."

Source: USAID Economic Policy Reform and competitiveness Project, June 2005 and July/August 2005 newsletters.

3.37 Assuming appropriate public-private initiatives, Mongolia's export sector could grow significantly and become much more diversified over the next ten-fifteen year period. Table 3.6 compares 2005 exports with two alternative scenarios. The assumptions used to develop these two alternative scenarios are reasonably plausible and conservative. These assumptions are consistent with previous suggestions that growth prospects for meat, natural products, tourism, and software development (or other knowledge industries) are greater than the growth prospects for cashmere or textiles. To allow for volatility in metals prices, Table 3.6 assumes either a 20 percent decrease in export earnings from mining (Scenario A) or a 20 percent decrease (Scenario B). Based on this plausible and conservative set of assumptions, depending on metals prices, Table 3.6 suggests that Mongolia could see 45-70 percent real growth in export earnings over the next 10-20 years and that mining's share of export earnings could decline from 59 percent to 32-42 percent. All this will depend, however, on appropriate public-private sector initiatives to develop Mongolia's market potential.

3.38 It is entirely possible that some other product or service could emerge as an engine for growth and export diversification. *Indeed, the previous discussion of various sectors should not be seen as an attempt to "pick winners."*

3.39 Developing lasting new sources of growth and export earning will require even greater willingness to introduce new or improved products or services, and will largely depend on achieving an investment climate that is more conducive and more supportive of innovation. Despite a small population and geographic/transport challenges, Mongolia's business community seems relatively innovative in efforts at export development. Between end-2002 and end-2005, the number of different products exported increased by almost one-third—from 351 to 462. Each year, during 2003-2005, Mongolia's business community introduced an

average of 135 products into export markets. Also during 2003-2005, roughly 20-25 percent of each year's starting export lines were discontinued during the year.[29] The apparent readiness of Mongolian entrepreneurs to innovate is encouraging. Developing new sources of growth and export earnings will probably require even greater willingness to introduce new or improved products or services. This, in turn, will largely depend on achieving an investment climate that is more conducive and more supportive of innovation.

Table 3.6: Current Export Sector vs. Alternative Scenarios

(constant 2005 U.S.D millions)

	2005	2020	2020	
	Actual	**Scenario A**	**Scenario B**	**Assumptions**
Mining	729	583	875	(i)
Cashmere garments	18	29	29	(ii)
Cashmere fiber	54	49	49	(iii)
Textiles	42	42	42	
Meat	10	85	85	(iv)
Natural products	-	330	330	(v)
Tourism	177	426	426	(vi)
Software development	-	50	50	(vii)
Scrap	8	3	4	(viii)
Other	206	206	206	(ix)
Total	1,244	1,803	2,096	

Assumptions:

i. Case A: export earnings decline 20 percent due to price drops and production cuts. Case B: exports earnings rise 20 percent due to production increases, but no change in prices.
ii. 50 percent rise in production; quality improvements support 10 percent rise in unit prices.
iii. No change in quality; 7.5 percent of de-haired cashmere redirected to domestic garment production.
iv. Quality and supply chain improvements allow 30,000 tons at $2,000/ton and 5,000 tons at $5,000/ton, on average.
v. Revenues equivalent to 1 percent of current East Asia market and 0.25 percent share of rest of the world market.
vi. 15 percent rise in international arrivals; doubling of receipts-per –arrival.
vii. 5,000 professional staff and export sales averaging $10,000 per professional staff.
viii. Quantity of scrap decreases 50 percent; price either declines 20 percent (Case A) or remains unchanged (Case B).
ix. Held constant, to avoid double-counting (e.g., of natural products, software).

Source: BOM for 2005; and World Bank staff calculations based on assumptions.

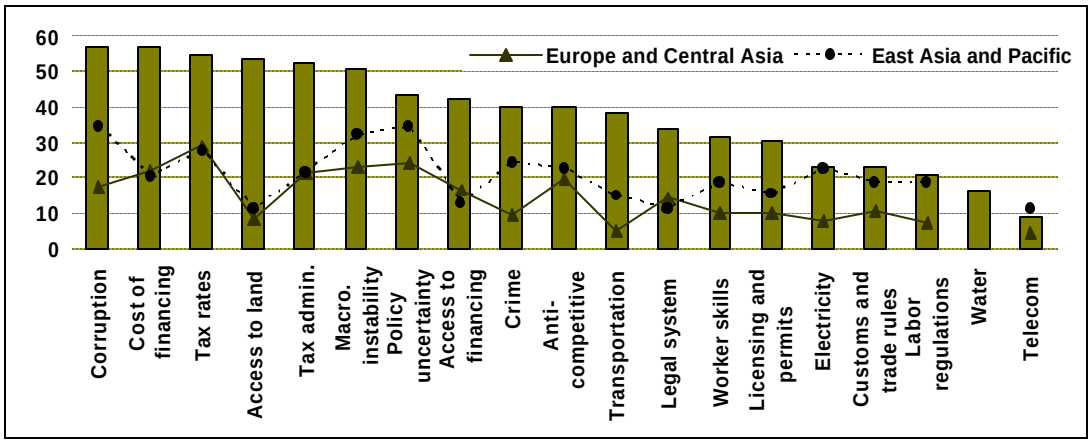
PUBLIC-PRIVATE INITIATIVES

3.40 Faster diversification of Mongolia's economy depends on: (i) investment climate reforms; (ii) investment in needed public goods; and (iii) careful use of Mongolia's mineral wealth. A recent survey of Mongolian firms highlights corruption, access to finance, taxes, crime, anti-competitive behavior, licensing and permits, power supply (and other infrastructure, including roads), and customs (which also relates to transport and supply chain

[29] Staff estimates based on UN COMTRADE data.

linkages) as major concerns. Mongolian firms are far more concerned about these investment climate impediments than are firms in the other transition countries of Europe and Central Asia or firms elsewhere in East Asia (Figure 3.7).

Figure 3.7: Investment Climate Impediments: Perceptions of Mongolian Firms



Source: World Bank, 2006.

3.41 ***Almost 80 percent of firms see corruption as an obstacle to business operations and growth***, with over half calling it a major or severe obstacle. Corruption appears to have worsened in recent years. Perceptions of corruption as a severe obstacle among Mongolian firms (56 percent) exceed such levels for Russia and most Central Asia republics (14-20 percent) and China (27 percent). Among the largest and best-performing firms in Ulaanbaatar—those that should excel in generating growth, employment, and exports—nearly 75 percent see corruption as a severe business problem.

3.42 ***Causes include opaque processes for government procurement; complex structures and opaque governance*** of enterprise groups and financial-industrial groups, which have close ties with government officials and political leaders; opaque processes for urban land registration; tax rules that heretofore encouraged overly complex business structures; non-transparent processes for tax administration; complex licensing requirements; and non-transparent customs procedures.

3.43 ***Reforms need to go beyond legislative fixes and also restructure the operations of key agencies***--e.g., tax administration, customs, and inspections—that directly interact with the business community. Such restructuring should be based on clear definition of the statutory powers, mandate, and functions of each agency and institutional/procedural fixes to administrative shortcomings. Since comprehensive reform of administrative processes takes time, immediate measures (e.g., public information) are also needed to provide transparency in government-business interactions.[30]

3.44 ***Access to finance remains expensive at best or, at worst, nonexistent.*** Despite declines in interest rates, real interest rates on *tugrig*-denominated loans remain far higher than rates in neighboring and transitional countries (Table 3.7). Fewer than 28 percent of

[30] World Bank, 2006, pp. 19-22, 43.4.

surveyed firms report having a bank loan, and less than 3 percent enjoy an over draft facility. With an overwhelming 90 percent of loans having a maturity of less than one year, debt financing of long-term capital expenditures is extremely difficult or impossible. An almost exclusive emphasis on collateral-based lending and extremely high collateral-to-loan ratios especially disadvantage SMEs, which tend to lack real property assets.

Table 3.7: Real Interest Rates, Selected Countries
(percent per annum)

	2000	2001	2002	2003	2004	2005
Mongolia:						
In domestic currency	25.4	31.1	34.6		23.2	17.9
In foreign currency	16.9	16.9	20.3		11.0	3.8
South Korea	6.3	3.6	4.1		2.3	2.9
China	5.6	5.4	6.1		1.6	3.8
Russia		16.4	15.4	9.1		
Eastern Europe		8.8	8.6	7.9		
Low-income countries		14.4	9.3	11.6		
Lower middle-income countries		0.4	0.7	1.1		

Source: various World Bank

3.45 Both high deposit rates and wide spreads contribute to high real interest on lending. High deposit rates reflect intense competition among financial institutions, plus an unprecedented credit boom. New savings and credit cooperatives, many of which suffer from low liquidity, have been offering extremely high deposit rates. Still-wide spreads are attributable to three factors: (i) requirements for banks to maintain sizable reserves in extremely low-yielding deposits at Mongol Bank; (ii) high overhead costs, due to too many branches and high administrative costs of doing business in remote areas; and (iii) high loan loss provisions due to recent credit over-expansion, lack of a credit culture, and inadequate creditor recourse to remedies through liquidation or bankruptcy.

3.46 A narrow base of borrowers may also hurt access to credit.[31] Many Mongolian banks are owned by enterprise groups (Table 3.8) or otherwise linked to private business groups or families. This has given rise to concerns about extensive self-dealings to the exclusion of potentially bankable outside businesses.

3.47 ***Mongolia's financial sector is at a crossroads as well***. It could rapidly develop into a well-governed system able to provide efficient financial services, or it could see rapid and severe erosion of post-2000 gains. Key recommendations include the following:

- Laws and regulations on savings and credit cooperatives (SCCs), NGOs, and finance companies should more closely regulate deposit-taking activity and promote the soundness of small and micro financial intermediaries.

- The inter-bank market should be developed to diversify bank funding sources and strengthen the monetary policy transmission mechanism.

[31] Across the entire sector, on average, 36 percent of loans were with the lender's 20 largest borrowers, while 55 percent were with the 50 largest. Over-exposure is even more serious at Mongolia's small banks.

Table 3.8: Selected Enterprise Groups

Enterprise group	Affiliated banks		Other affiliates	
	Subsidiaries	**Shareholdings**	**Subsidiaries**	**Shareholdings**
MCS			Spirit Bal Buram; Interpress; MCS Electronics; MCS Construction; Coca-Cola distributor; Irish Pub; Orchlon School; Mongolian wool & cashmere; Anun; Anungoo; Shangri-la trade center & hotel; Tavan Tolgoi	Skytel, Unitel
Tavan Bogd	Khaan Bank		Khaan Palace hotel, Palace Hotel, Fuji film studio, Juulchin tour, UB flour plant, Technique Import, Tavan Bogd cosmetics; Gobi cashmere	
Jenco	Capitron Bank	Trade & Development Bank	Bayangol hotel, Konica franchise, Makh Impex, Ikh Mongol, Atar Urguu, Jenco tour; Hilton hotel; Tavan Tolgoi	APR, Shunkhlai petrol imports
Altai Trading			Chinggis Hotel, Tavan Tolgoi, Altai cashmere	Boroo gold
Bodi	Golomt Bank		Incon construction, Magicnet, Bodi computer	
Petrovis		Capitron Bank	Petrovis gas stations, NIC petroleum distribution; Tavan Tolgoi	
Fortuna	Post Bank	UB City Bank	American School, UB Mart shopping center	
Erel	Erel Bank		Erel construction, Erel cement factory, Erel secondary school, gold mines in Ult and Zaamar	
Chingis Khaan Bank	Savings Bank			

Source: World Bank staff compilation from press reports; mission interviews.

- To address credit risks—a contributor to high interest rates—liquidation and bankruptcy procedures should be made more predictable and creditor-friendly; credit reporting and registration of security interests should be improved; and controls on related-party lending should be strengthened.

- Cross ownership between financial institutions and non-financial enterprises should be prohibited or more strictly controlled.

- To further address high rates on loans, the BOM should reduce reserve requirements, raise rates on deposits by member banks, and recognize CBBs as acceptable bank collateral.

- Consolidation of the banking sector would help reduce administrative overhead costs and excessive competition for deposits.

- To maintain financial services in rural areas, however, efficient micro-lenders should be encouraged to increase penetration of rural areas.

- To facilitate longer-term financing of capital expenditures, leasing should be encourage through passage of a financial leasing law and parallel changes in accounting and tax treatment of leasing.

- Governance reforms should strengthen Bank of Mongolia's readiness to enforce regulations and supervise financial institutions.

- Corporate governance at banks should be strengthened, especially in the composition, fiduciary duty, and responsibilities of boards of directors; disclosure of conflicts of interest by owners, directors, and management; and implementation of external audits.

- The desirability and alternatives for introducing deposit insurance should be evaluated.

3.48 ***Mongolia's tax system continues to pose problems.*** While top corporate tax rates have been comparable to those in other Asian economies, effective tax rates in Mongolia have been higher because of the non-deductibility or limited deductibility of many items (e.g., insurance premiums, staff training, advertising) that are fully deductible in other countries. The lack of tax loss carry-forwards or carry-backs has been a disincentive to accept business risk, since any losses could not be recouped at tax time. At least until recently, the corporate tax rate jumped from 15 percent to 30 percent once a firm's net income crosses a 100 MNT threshold. This created strong incentives for firms to stay artificially small, often by splitting into smaller affiliates. This has contributed to complex and opaque corporate structures, which have probably impeded access to finance because it was more difficult for lenders to ascertain consolidated financial position and performance. Social security and other tax rates have been high. Average time spent with tax inspectors has been 3 to 7 times higher for Mongolian firms than for firms in the former Soviet Union. Tax inspectors have used their substantial discretion to seek rents. At the same time, firms' under-reporting of sales and tax evasion has been rife.[32] Thus, in terms of maximizing inefficiency (both in tax compliance and business behavior) and corruption, Mongolia's tax system has been a model of what *not* to do.

3.49 A law passed by the Great State Hural in June 2006 appears to have moved Mongolia's corporate tax law closer to international best practices.[33] The new law's treatment of tax loss carry-forwards or carry-backs, however, remains unclear. Given the urgent need to encourage Mongolia's business community to take reasonable risks in developing new sources of growth and export earnings, very generous treatment of tax losses is warranted.[34]

[32] World Bank, 2006, pp. 13-8.

[33] Tax rates would be lowered from 15 percent to 10 percent and from 30 percent to 25 percent. The threshold for the higher rate would be raised from MNT 100 million to MNT 3 billion, as a result of which 99 percent of corporate tax payers would operate in a "flat tax" environment. More legitimate business expenditures could be deducted. An investment tax credit would encourage capital investment. The draft law included a three-year tax loss carry-forward, but that may not have made it into the final draft. Discretionary tax exemptions would be eliminated. USAID Economic Policy Reform and Competitiveness Project, June 2006 newsletter.

[34] In the U.S., for instance, tax losses can be carried forward __ years and carried back __ years.

The tax regime for mining companies raises special issues. In particular, apart from lacking adequate or appropriate definitions,[35] the Windfall Profits Tax is an ill-considered attempt to promote Mongolia's downstream processing of copper and gold concentrates.

3.50 Tax administration should be restructured to reflect clear definitions of its statutory powers, mandate, and functions and to alleviate institutional and procedural shortcomings. In addition, greater public dissemination of tax administration procedures is needed to promote transparency.

3.51 ***Allegations of anti-competitive behavior warrant closer scrutiny.*** Anti-competitive behavior is considered a problem by more firms in Mongolia (40 percent) than by firms in all of East Asia (about 21 percent) or Europe and Central Asia (about 19 percent). It is difficult, however, to quantify the issues. Although Mongolia established an Unfair Competition Commission in January 2004, the Commission has no analytical capability or enforcement capability. Our own review of available tax data suggests that the banking, gold, hotel, cashmere, construction, and retail sectors are reasonably competitive, but that some enterprises/groups exceed a 30 percent market share in some sectors, for example, petroleum distribution, vodka.[36] In addition, the lack of a regulatory framework for such utilities as power and water, especially in remote areas, may encourage price gouging. Greater authority and capacity building for the Unfair Competition Commission and development of regulatory frameworks for utilities is needed to address competitiveness concerns.

Table 3.9: Starting a Business, Selected Countries

	# of procedures	Time (days)	Cost as % of per capita GNI	Minimum capital as % of GNI
Mongolia	8	20	6.2	140.2
China	13	48	13.6	946.7
South Korea	12	22	15.2	308.8
Japan	11	31	10.7	**75.3**
Taiwan, China	8	48	**6.0**	216.3
Kyrgyz Republic	8	21	10.4	**0.6**
Kazakhstan	**7**	24	8.6	26.6
Russia	8	33	**5.0**	**4.4**
Hungary	**6**	38	22.4	**79.6**
Germany	9	24	**4.7**	**47.6**
Turkey	8	**9**	27.7	**20.9**
United States	**5**	**5**	**0.5**	**0.0**

*Source: World Bank, Doing Business 2006. China significantly reduced minimum capital requirements in October 2005. Better than Mongolia in **bold**.*

3.52 ***Cross-country comparisons suggest that Mongolia's business regulation is not burdensome***, although 31 percent of Mongolian firms surveyed perceive business registration and licensing as a severe impediment. Among eleven other countries—including several

[35] For example, of gold prices, copper prices, deductible business expense.

[36] Sales and import data suggest that the Petrovis group (which includes NIC) may control half of Mongolia's petroleum products distribution. Data on excise tax revenues suggest that Spirit Bal Buram controls about 40 percent of the domestic market for vodka. While some express concerns about concentration in the retail sector, for instance in computer sales, data from the company indicate that the largest computer vendor (MCS Electronics) has just a 25 percent market share.

OECD, several transitional, and China—rules on business start-up are clearly easier in four (Russia, Hungary, Germany, United States), but clearly more difficult in rapidly growing China (Table 3.9). Looking at licensing among this same group, licensing requirements are easier in three (South Korea, Japan, United States), but more difficult in China (Table 3.10).

Table 3.10: Dealing with Licenses, Selected Countries

	# of procedures	Time (days)	Cost as % of per capita GNI
Mongolia	18	96	58.8
China	30	363	126.0
South Korea	**14**	**60**	232.6
Japan	**11**	87	**19.7**
Taiwan, China	32	235	250.9
Kyrgyz Republic	**16**	152	325.2
Kazakhstan	32	258	68.3
Russia	22	528	353.7
Hungary	25	213	279.1
Germany	**11**	165	82.8
Turkey	32	232	368.7
United States	19	**70**	**16.9**

Source: World Bank, Doing Business 2006.
*Better than Mongolia in **bold**.*

3.53 It may be that actual administration of business regulations is more burdensome than what study of Mongolia's laws/regulations alone would suggest. In any event, Mongolia faces enough geographic and other challenges. Its rules on business start up and licensing and their implementation should models of simplicity and transparency.

3.54 ***Access to land is a special issue for Mongolia's livestock sector.*** The feed and fodder sector in Mongolia is currently weak and the private sector has not filled the void left when the state supported industry collapsed in the early 1990s. Feed and fodder are important sources of nutrition for livestock and help to both increase the productivity of animals and also enable animals to survive hard winters. It is for the latter reason that the state remains engaged in the sector through a national system for distributing feed and fodder reserves in preparation for winter. This undermines efforts by the private sector to enter the industry. Hay production is at a low level. Herders often do not have the skills, capital or resources to grow, harvest and store hay. Typically, hay production involves group actions, for instance in the joint ownership of land tenure rights and assets such as fences, irrigation infrastructure, storage facilities and harvesting equipment. Common complaints of herders center on access to land for hay-production (see below) and access to finance, in particular the perceived excessive interest rates, lack of term financing and limited options for group (e.g., cooperative or herder NGO) borrowing.

3.55 The government has taken important steps to improve land regulations and administration with the 2002 Land Law. While it is an improvement on the earlier 1994 Land Law, there are still gaps and ambiguities (including lack of clarity on what entities may possess land rights the relationship and consistency between land user rights and water user rights), and in practice has been interpreted differently across the country. The implementation of the law is determined by local awareness and interpretation, and local land officers do not always have sufficient capacity. Further amendments to the law may be

necessary to establish a fair and transparent system for allocating pasture land resources, which will be critical for managing pastureland and for the sustained growth of the sector.

3.56 ***Most Mongolian exporters or importers regard customs clearance as a major or severe obstacle.*** Clearance times for exports average 4 days, but can take up to 15 days. For imports, the average is 3 days, but clearance can take up to 30 days. Customs valuations and exemptions have been a major venue for corruption. Further reform of processes, administrative procedures, and incentives are needed if Mongolia is to succeed in diversifying its export sector.[37]

3.57 ***Mongolia's infrastructure compares poorly with other countries in the region.*** For instance, utilities performance seems much worse (Table 3.11). Some 38 percent of surveyed firms are dissatisfied with Mongolia's transport sector. While overland transport to Russia and China will remain problematic, development of the roads network within Mongolia would help. So would better access to air cargo services.[38]

3.58 ***Thus, additional public and private investment in infrastructure is warranted.*** Likely candidates for additional investment include inter-city roads; power, water/waste water, and telecommunications infrastructure; and development of downtown Ulaanbaatar to enhance its livability. To facilitate the clustering of new growth businesses, development of a new industrial park may make sense. For instance, it might make sense to cluster high-value food and natural product exporters, international-standard packaging producers, cold chain facilities, phyto-sanitary labs, and related activities in an industrial estate with good infrastructure near Ulaanbaatar's airport. Establishment as a free trade zone could also facilitate the import of any critical inputs.

Table 3.11: Quality of Infrastructure Services, Selected Countries

	Days to obtain an electrical connection	Power outages (days)	Days to obtain a water connection	Water supply failures (days)
Mongolia	19.0	22.0	21.0	4.0
East Asia & Pacific	9.9	5.5	8.9	3.1
Europe & Central Asia	12.3	12.3	Na	4.4
China	10.4	na	Na	Na
Russia	11.9	2.7	Na	1.3
Kazakhstan	7.2	4.6	Na	1.9

Source: World Bank, 2006, p. 30.

3.59 ***Key workforce issues are under-utilization of human capital and skill mismatches.*** Idleness rates exceed 20 percent for 25-29 year-olds. This problem includes both urban populations and those with secondary or higher education. Indeed, idleness is particularly high (26 percent) for vocational school graduates. Insufficient job opportunities have

[37] World Bank, 2006. pp.32-4. Asia Development Bank, "Mongolia: Customs Trade Facilitation and Modernization: Priority Programs," February 2006.

[38] It is not clear what effect an "open skies" policy would have on Mongolian air cargo. The relatively small size of Mongolia's economy may be the main constraint now on faster development of air cargo. The potential role of air cargo in encouraging high-value exports, impediments to air cargo development, and usefulness of temporary subsidies deserves further examination.

encouraged overseas migration[39]. Higher percentages of workers are either over-qualified or under-qualified for their current assignments. Especially in construction and mining, firms have responded to inadequate skills among local workers by hiring foreign workers, particularly Chinese and Russians.

3.60 Contributing factors include constraints on growth and job creation, as a result of investment climate impediments; a structural shift in the economy that has raised demand for foreign language skills, IT and technical skills, and behavioral (e.g., communications) skills. In addition, school curricula and teaching methods have not kept up with the new practical demands from the labor market. Vocational education is outdated. Institutions of higher education do not serve the needs of the knowledge economy.

3.61 Such shortcomings in the education system may explain, for instance, foreign domination of Mongolia's mining sector. Consideration of historical experiences in Chile and Australia suggest that Mongolia could become a major worldwide purveyor of industrial knowledge (e.g., in mining, in environmental protection) (Box 3.6) within twenty years, but that it would need to begin establishing the institutional basis for these knowledge businesses now.

Box 3.6: How Did Australia Come to Run Chile's Mines?

Chile suffered from its historical lack of an infrastructure for scientific learning and education. Mathematics was particularly neglected. Traditionally, higher education focused on theology and law. As late as 1915, the National University's 970 graduates included only 19 engineers. This weakened Chile's capacity for innovation and adoption of new technology, including the capacity to exploit less-rich veins of copper. There may have been an implicit acknowledgement that technically, Chileans could not manage their resources as well as foreigners could. Reliance on foreigners discouraged development of indigenous mining universities/institutions and indigenous capacity for innovation and analysis. As late as the 1950s, foreign libraries contained more information about Chilean copper than did Chile's own libraries. Not until 1955 was the Copper Department created to oversee U.S. mining firms' operations. According to one assessment, "it took about 40 years, from 1925 to 1965, to develop a domestic capacity to analyze the role of copper and to educate Chilean professionals and technicians" in the management of large copper firms.

Australia, starting from humble roots, had been a penal colony for Great Britain until the 1840s. Several local universities became beachheads for foreign research—Sydney Mechanics Institute in 1843, Sydney Technical College in 1878, and a School of Mines in Ballarat in 1870. Recruitment of engineers and metallurgists in 1886 firmly linked Australia to innovations in the U.S. The University of New South Wales (UNSW) was founded in 1949, using the Massachusetts Institute of Technology (MIT) and Berlin University of Technology as models, with a focus on research and teaching in science and technology. The UNSW School of Mining Engineering now ranks as one of the largest worldwide educators of mining engineers. As of 1920, Australia had only 47 engineers per 100,000 people, compared with 128 for the U.S. Australia's engineering cadre reached 163 per 100,000 by 1955.

Source: World Bank, 2002

3.62 ***More joint public and private sector support for R&D institutes may also make sense.*** While government efforts are most appropriately focused on general factors (e.g.,

[39] Between 1990 and 2003, about 120,000 Mongolians emigrated, mainly to South Korea and Japan. Remittances peaked in 2004 at $202 million (nearly 13 percent of GDP). Surveys indicate that 60-70 percent of migrants are aged 20-35, that 50-60 percent has higher educations, and that migrants return to Mongolia after 3.7 years, on average. C. Ridao-Cano, "Labor Market and Skills in Mongolia," background note, December 2006.

education, infrastructure), the most significant factors for competing in an innovation-driven economy are specialized and associated with industries or groups of industries. Government attempts at creating specialized factors (e.g., vocational training, applied technology) on its own are risky. Worldwide experience shows that government should involve industry and encourage industry to play a major role in the creation of specialized factors.[40] The development of Chile's approach to R&D in the fruit sector is illustrates the power of an appropriate alignment of public sector and private sector involvement in industry-specific R&D (Box 3.7). Such experiences may be relevant for knowledge development in priority sectors or potential growth sectors for Mongolia (e.g., geological prospecting, environmental protection and remediation, natural personal care products, health foods and supplements."

Box 3.7: R&D in Agriculture: Chile's Example

During the early 1960s, the Chilean Development Corporation (CORFO), financed by a 15 percent tax on copper, played important roles, for instance, in surveying existing fruit orchards, analyzing foreign demand, elaborating production goals, introducing new varieties, establishing nurseries, constructing cold-chain facilities at strategic locations to extend post-harvest shelf life, and conducting phyto-sanitary inspection of exported fruit. Establishment of the National Institute of Agriculture Research (INIA) in 1964 supported further research support. Private sector investment in fruit sector research prior to 1975 was negligible. After 1975, several institutions (FONDECYT, FONDEF) were created to promote private sector participation and competition in R&D. The operation of these institutions required the use of either collaborative funding or research originating in the private sector. In addition, a 1989 law introduced tax incentives for R&D donations to institutions of higher education. Between 1973 and 1990, private spending on agriculture R&D increased 19 times, rising from 2 percent of agriculture R&D in 1973 to 13 percent in 1990 to 20 percent by the late 1990s. After 1975, INIA also moved toward self-financing—by 1985 receiving 40 percent of its income from sales and another 20 percent from grants, loans, and other non-government sources. "The increased availability, diversification, and private direction of funding sources were associated with greater weight given to research on exportable crops and the investigation of postproduction technologies, product characteristics and quality, and other topics important to commercial agriculture. For-profit research activities proliferated, especially where the returns to identification and adaptation of new varieties and methods was more easily internalized."

Source: World Bank, 2002, pp. 79-82.

3.63 *Prudent management of Mongolia's mineral revenues is needed to support investment in infrastructure, education, and innovation*. Faced with natural resource windfalls, a number of countries have established "sovereign wealth funds" to manage resource revenues (Table 3.12). Most are based on oil wealth, but a few draw on mineral legacies.[41] The best funds rely on professional management and carefully crafted investment strategies, sound corporate governance, and transparency and full public disclosure. Some funds grow their wealth by investing in publicly-tradable securities.[42] Others may invest in projects to support the economic development of their home country. Chile's development fund is an interesting example of the latter.

[40] Michael Porter, *The Competitive Advantage of Nations*, (Free Press, 1990), pp. 620, 627.

[41] For instance, Kiribati's Revenue Equalization Fund was established in 1956 to manage revenues from local phosphate mines. The mine closed in 1979, but the Fund continues to support the Kiribati economy.

[42] For instance, 50-70 percent of the Norway Fund is to be invested in fixed income securities and 30-50 percent in equities, *outside* Norway. There are also regional guidelines (Europe, North America, Asia, etc.) for asset allocation. In Canada, at the Alberta Heritage Fund, about 30 percent of assets are in fixed income, 45 percent in equities (including 30 percent in non-Canadian equities), and 25 percent are in a mix of other assets (e.g., real estate, absolute return hedge funds, private equity, and timberland).

Table 3.12: Sovereign Wealth Funds

Country	Fund name	Assets ($m)	Established	Source
United Arab Emirates	Abu Dhabi Investment Authority	250,000	n.a.	Oil
Norway	Government Pension Fund	266,000	1990	Oil
Kuwait	Kuwait Investment Authority	65,000	1953	Oil
Brunei	BIA	30,000	1983	Oil
Russia	Stabilization Fund	27,700	2003	Oil
Canada	Alberta Heritage Fund	15,400	1976	Oil
Iran	Foreign Exchange Reserve Fund	8,000	1999	Oil
Kazakhstan	National Fund	5,200	2000	Oil, gas, metals
Botswana	Pula Fund	4,700	1966	Diamonds, etc.
Chile	Copper Stabilization Fund	3,900	1985	Copper
Oman	State General Reserve Fund	2,000	1980	Oil, gas
Azerbaijan	State Oil Fund	1,000	1999	Oil
Venezuela	FIEM	714	1998	Oil
Kiribati	Revenue Equalization Fund	400	1956	Phosphates

Source: State Street Global Advisors, "Who Holds the Wealth of Nations?" August 2005; updated in selected cases from fund web-sites.

3.64 Thus, Mongolia should adopt appropriate policies and programs to facilitate export diversification, both to reduce vulnerability to commodity shocks and encourage additional growth. Key investment climate reforms include restructuring of processes at key agencies (e.g., tax, inspections, customs) to enhance government efficiency, transparency, and integrity; tax reforms (e.g., loss carry-forwards) to encourage investment and innovation; regulatory and supervisory actions to help reduce the cost of financing; limits on anti-competitive behavior; and improvements in public safety and quality of life in Ulaanbaatar. Additional investment in education and infrastructure is needed, perhaps including industrial park infrastructure for a new growth cluster in Ulaanbaatar and public-private R&D institutes. To marshal the financial resources to support needed investments, it will be important for Mongolia to harness and efficiently deploy revenues from its rich endowment of minerals.

Box 3.8: The Chilean Development Corporation

The *Corporación de Fomento* (CORFO) was established in 1939. Financed by a 15 percent tax on copper, CORFO's efforts "would lay the foundation for the dynamic export industries of the next half century." To develop Chile's fishing sector, CORFO contracted technical assistance missions, established a marine biology station in 1945, granted sizable tax exemptions in 1952, in 1954 joined the army and University of Chile in surveying coastal waters, and thereafter financed fixed asset and supply chain investments. CORFO took the first inventories of Chile's forests, contracted technical assistance in 1944, and in 1953 financed processing plants for cellulose and newsprint. To support development of Chile's fruit industry, CORFO financed technical assistance, extended credit for experimentation and cultivation, and invested in supporting infrastructure. In 1941, CORFO financed efforts to promote exports of wood products and wine. Subsequently, Chile's export sector and economy stagnated as a result of exchange rate controls and other protectionist interventions.

Following economic liberalization in 1975, Chile's export drive resumed. Between 1975 and 1995, non-copper exports increased ten-fold and its share of exports fell to 45 percent. Fruit, fishmeal, lumber, and wood furniture rose to 9 percent, 8 percent, and 6 percent, respectively, of exports.

More recently, support from CORFO and the Fundación Chile (a public-private R&D institute) for initial production, dissemination of know-how and technology, assistance in meeting ISO standards, and foreign study tours to help domestic industry keep in touch with the international technology frontier is credited with having helped Chile boost its export of farm-raised salmon from less than $50 million in 1989 to $1.2 billion in 2003 and $1.7 billion in 2005. The question now is whether such organizations as CORFO can move from selling fish to selling fish cultivation knowledge.

Source: World Bank, 2002; Jorge Katz, "Salmon Farming in Chile".

4. THE TYRANNY OF DISTANCE AND THE ROLE OF GEOGRAPHY

Mongolia could take more advantage of its unique location between Russia and China by exploiting more systematically its position of a transit corridor for trade between its two neighboring economic giants and beyond. Policies should, therefore, focus on facilitating trade on the China-Russia corridor, both internally by improving internal infrastructure and by streamlining regulations and bureaucratic procedures, and externally by looking at possible trade facilitation agreements and regulations harmonization. Internally, one cannot escape but see the increasing migration of people into the Ulaanbaatar area and its environs (especially, the Ger-areas) that is occurring today. This may provide the agglomeration effects to foster growth if appropriate infrastructure and public/private services are provided. Appropriate investments in infrastructure and associated policy measures to promote its efficient development and use may go a long way in facilitating trade-routes, cross-country commerce and foreign direct investment. It would help strengthen supply chains and thus improve the investment climate.

4.1 This chapter endeavors to look into considerations that determine *where* future growth takes place in Mongolia. Having identified the binding constraints to Mongolia's future growth (Chapter 2) and the need to alleviate them through various policies one needs to be cognizant of the unique geography of Mongolia. This makes the design and implementation of the desirable investments and corresponding activities difficult to undertake and different from countries whose people do not face the tyranny of distance and harsh weather conditions as Mongolia. This will need to be discussed in the context of the ongoing debate about regional development in Mongolia, on the one hand, and the reality of ongoing agglomeration effects that are emerging due to concentration of economic activities in and around Ulaanbaatar. All this will significantly impact on the geography of economic growth in Mongolia over the long term.

4.2 Key questions that this chapter aims to address are: Is geography a constraint to economic growth in Mongolia and to what extent? Where is economic growth taking place? What can policymaking do about geographical income or growth disparities and constraints? What are the existing regional development tradeoffs for policymaking and in particular infrastructure policy? The low aggregate population density of Mongolia hides the fact that the labor market for Mongolia is segmented, with significant skills mismatches prevalent. Policy recommendations to address this are also provided in this chapter. Specifically, the chapter is organized as follows: the first section presents a snapshot of Mongolia national physical and human geography, where the unique characteristics of the country are singled out. This section also draws on the recent literature on "economic geography", and cross-country experiences, to assess the extent to which geography can constrain economic growth. The second section focuses on Mongolia's internal geography to analyze *where* economic

growth is taking and will take place in the medium-term, what are the other considerations to take into account for policymaking such as the optimal or desired level of urbanization or spatial disparities. Policy recommendations are provided to guide policymakers to design regional development policies, and in particular for infrastructure development in the country over the next few years as well as for accommodating labor migration and labor market development.

MONGOLIA NATIONAL GEOGRAPHY AND ECONOMIC GROWTH

4.3 ***A vast territory with a small population***. Mongolia is often singled out by its unique human and physical geography. The so-called "tyranny of distance" is commonly used to characterize the challenges posed by the country geographical situation. *Mongolia occupies an area* (1,564,116 sq km) that is equivalent to France, Italy and Spain combined. Its total population of 2.6 million people translates to an average of 1.6 inhabitant per square kilometer—the country with the lowest population density in the world[1]. But most of the country outside the capital city of Ulaanbaatar is even less densely populated, with a population density of less than 1 inhabitant per sq km (Figure 4.1). With a moderate population growth rate of 1.5 percent in recent years, this pattern is unlikely to change in the medium run[2].

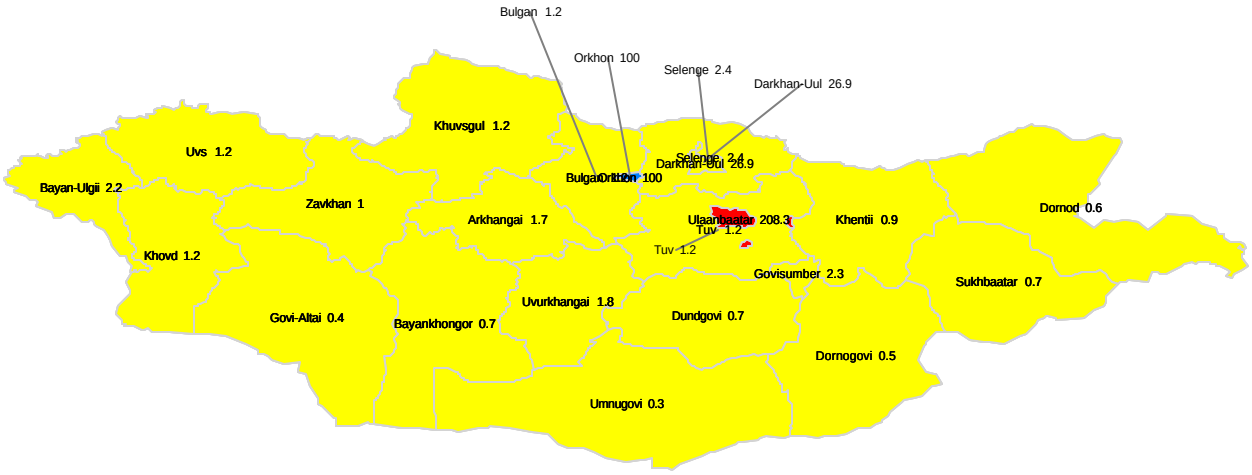
4.4 ***Mongolia's weather is characterized by harsh extremes***. Summer weather is extremely variable and unpredictable, with multiyear averages concealing wide variations in precipitation, dates of frosts, and occurrences of blizzards and spring dust storms. Summer extremes reach as high as 38° C in the southern Gobi region and 33°C in Ulaanbaatar. Average temperatures over most of the country are below freezing from November through March and are about freezing in April and October. Such extremes make the effective construction period for infrastructure limited to a few months each year. January and February averages of -20°C are common, with winter nights of -40°C occurring most years. More than half the country is covered by permafrost, which makes construction, road building, and mining difficult. All rivers and freshwater lakes freeze over in the winter, and smaller streams commonly freeze to the bottom. Although winters are generally cold and clear, there are occasional blizzards known as *dzud* that do not deposit much snow but cover the grasses with enough snow and ice to make grazing impossible, causing massive losses of livestock. Official statistics list less than 1 percent of the country as arable, 8 to 10 percent as forest; with forest coverage reported to diminish in recent year due to over-logging, and the rest as pasture or desert. Such environmental conditions pose severe challenges to human and livestock survival. Grain, mostly wheat, is grown in the valleys of the Selenge river system in the north, but yields fluctuate widely and unpredictably as a result of the amount and the timing of rain and the dates of killing frosts.

[1] Greenland has a lower population density (0.13 inhabitants per sq km) but is not a sovereign state.

[2] By turn of 20th century Mongolians numbered only half a million. During seven decades of communism, the population quadrupled, especially after the "baby boom" of 60s, mostly due to the improvement of health care and education systems with the Soviet assistance. Following the independence and the economic turmoil that accompanied the withdrawal of the Soviet support, population growth slowed down markedly. In the recent period, population growth has remained in the range of 1.5 percent a year.

Figure 4.1: Most of Mongolia's Population is in Ulaanbaatar.

Population Density (end-2006)



	People per sq. km
Ulaanbaatar	208.3
Orkhon	100.0
Darkhan-Uul	26.9
Selenge	2.4
Govisumber	2.3
Bayan-Ulgii	2.2
Uvurkhangai	1.8
Arkhangai	1.7
Uvs	1.2
Khovd	1.2
Bulgan	1.2
Khuvsgul	1.2
Tuv	1.2
Zavkhan	1.0
Khentii	0.9
Bayankhongor	0.7
Dundgovi	0.7
Sukhbaatar	0.7
Dornod	0.6
Dornogovi	0.5
Govi-Altai	0.4
Umnugovi	0.3

Source: World Bank staff estimates

4.5 *A landlocked mineral-rich country with a narrow economic base*. Mongolia economic base is concentrated on a few minerals and livestock-based products. As a consequence, Mongolia has been vulnerable to volatile commodity prices and to adverse climatic shocks. Its landlocked nature, between the two economic giants—China and Russia—has made Mongolia's access to international markets crucially dependent on what happens with and in these neighboring countries. This combination of circumstances makes the discussion about Mongolia's future sources of growth all the more challenging and policy prescriptions not as easy to implement in countries with more temperate climates and diverse economies.

IMPLICATIONS FOR ECONOMIC GROWTH

Being a sparsely populated, large and landlocked country

4.6 In a sparsely populated country everything increases when valued in terms of the per capita cost of infrastructure and service delivery. In Mongolia, this cost is even further magnified by the harshness of its winters, which significantly increases the cost of transportation and road maintenance. The issue of access to heating becomes a question of survival of its population. In the context of a low income country such as Mongolia, this heightens existing tradeoffs between financial constraints and fiscal space on the one hand, and the need to address the country's basic needs for development and poverty alleviation on the other.

4.7 Economic literature shows that, on average, landlocked countries grow slower than those countries that are not.[3] They typically have a lower income per capita, and are less open. They face specific challenges, such as higher trade costs, not only related to the difficulty of land transportation over great distances, but also because they are dependent on their neighbors to access markets. Indeed, trade from a landlocked country has to pass through sovereign transit country to access international shipping markets. This translates into a heightened dependence on other countries' transit routes to access overseas markets. This dependence can take at least four forms: (i) dependence on transit infrastructure; (ii) dependence on political relations with neighbors; (iii) dependence on peace and stability within transit neighbors; and (iv) dependence on administrative processes in transit. This is true in Mongolia as well.

4.8 Weak or ill-adapted infrastructure in transit countries imposes direct trade costs and limits the ability of landlocked country products to compete in global markets. It also limits the return to internal investment on landlocked countries' internal infrastructure since market opportunities are constrained. Mongolia's external trade is almost entirely dependent on a single rail link in its north-south corridor.[4] But when the transit cargo arrives at the border with China, either the axles on the wagons need to be changed or containers have to be transferred from one wagon to another. Road transportation options are also extremely limited. There is a paved road between Ulaanbaatar and the Russian Border but there is no

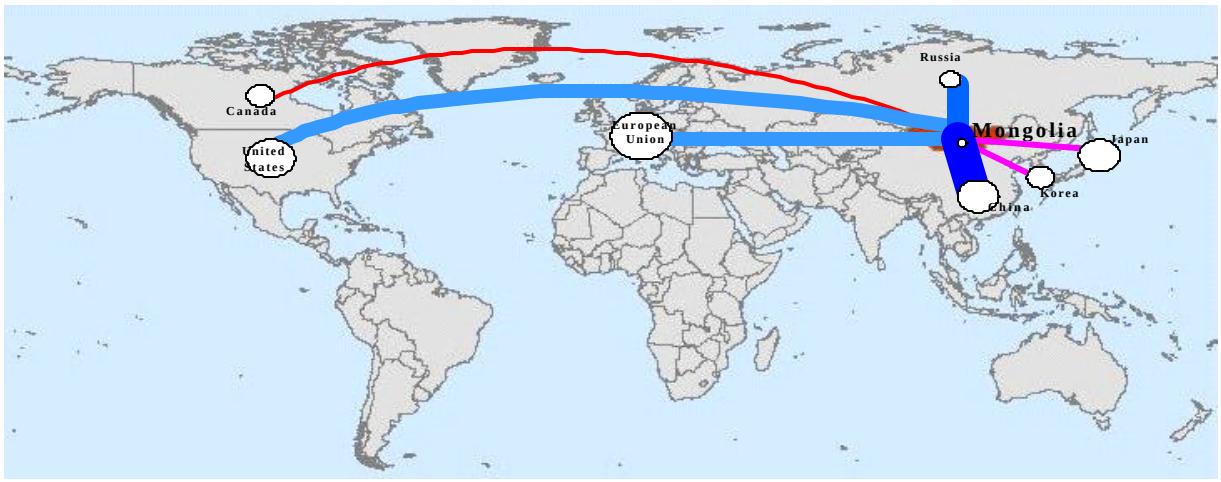
[3] See Faye, McArthur, Sachs, 2004, "The challenges facing landlocked countries", Journal of Human Development, Vol. 5, N.1.

[4] Mongolia currently has railway and motoroad network from its north border in Selenge aimag to Ulaanbaatar city. A 200 km long paved road from Ulaanbaatar City to China and on Zamyn Uud City in the southern direction is being constructed,

paved road connecting the entire length between Ulaanbaatar and Zamyn Uud (at the border with China). Construction of these crucial land links are under discussion in Government and with its external partners.

4.9 To transit a country, there are cost of direct transit and customs charges. However, these direct costs form only a small part of the picture. International transit also requires burdensome paperwork and bureaucratic procedures that are costly to deal with and place a high administrative burden on shippers. Border crossing also cause long delays on transit route traffic. It is regularly noted that the time delays and the variability of time-in-transit are of greater concern to traders than direct costs, as they hinder the ability to meet delivery contracts without large inventory stocks. Transit costs for Mongolian goods can be very high. First, customs valuations and exemptions have become the locus for rent-seeking, with corruption in the customs valuation process being a very large problem. Over half of the Mongolian exporters surveyed rated customs processes as a major or severe obstacle. Predictability of time taken to clear customs is a concern. Clearances can take four days on average, but can be as long as two weeks. Paper-based processes are the main source of delay in customs, as past automation efforts have not solved the problem.[5]

Figure 4.2: Trade Links: Mongolia Main Trading Partners (2001-2005 Annual Average)



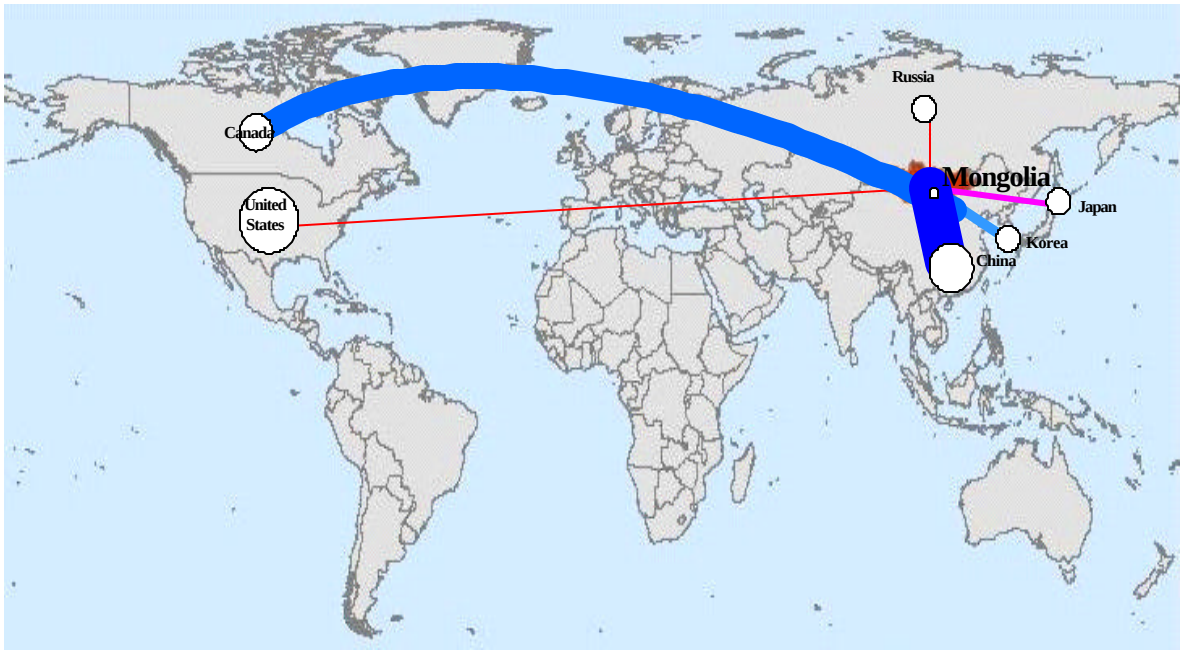
Source: World Bank.

[5] In 2006, the General Customs Office has taken several steps to improve its technical equipment and some customs clearance procedures, e.g. an IT system has been installed through which the General Customs Office in UB can monitor customs clearance activities of its branches.

Having no access to the sea is less relevant than having access to markets

4.10 Being sandwiched between Russia and China, Mongolia is dependent on these two countries for external trade, either by trading directly with them or going through their territory to access other markets. On the one hand, accessing other markets is complicated by trade facilitation challenges beyond the Russian and Chinese borders. Barriers include: (i) dependence on China railways; (ii) custom processes; (iii) lack of harmonization in basic documentary and clearance processes; (iv) animal products restrictions; and (v) trucks prohibition. On the other hand, being sandwiched between China and Russia there are abundant opportunities for Mongolian trade, foreign direct investment and other economic transactions with its two fast- growing neighbors. The problem of Mongolia's constrained access to international markets can be partly solved by increasing its trade with, and FDI from, its two main trading partners—themselves fast growing economies (Figure 4.2 and 4.3 show recent trends in this regard). In that sense, having no access to sea is less relevant than having access to markets.

Figure 4.3: FDI Links: Mongolia's Main Sources of FDI (2000 – 2004 Total)



Key:

Total FDI net inflows (i.e. from the entire world):

$743.05 billion; (United States) | $240.39 billion; (China) | $127.6 billion; (Canada) | $26.9 – 36.5 billion; (Korea, Russia, Japan) | $0.78 billion. (Mongolia)

Total bilateral net FDI inflows to Mongolia (i.e. FDI to Mongolia from Country B + FDI to Country B from Mongolia):

$338.42 million; (China) | $176.89 million; (Canada) | $57.18 million; (Korea) | $31.45 million; (Japan) | $13 million. (United States; Russia)

Source: World Bank.

4.11 Recent steps toward the improvement of trade facilitation and customs clearance processes in 2006 include: (i) installation of an X-ray camera November, 2006 in Zamin-Uud city (southern border port) to screen cargos (containers) carried by trucks; (ii) Installation of fiber-optics lines in General Custom Office to monitor customs clearance procedures of branches. For instance, currently the Zamin-Uud customs branch is fully connected while the Selenge aimag and "Chinggis Khaan" International Airport customs branches are partially connected with the Customs General Office since 2006. (iii) Also, in 2006, a system of "e-declaration" secure website was introduced, which helps to speed up the Customs clearance process somewhat. (See: http://www.ecustoms.mn/). Customers can attend online training on this system free of charge. With a view to track illegal transfers of precious metals, metal detectors have been installed in ten customs branches, and portable metal detectors were provided to all customs branches in 2006.

Being a mineral-rich country is a mixed blessing

4.12 *Being a resource-rich country is a mixed blessing since it has a double-sided impact on economic growth.* On the one hand, it brings in much needed financial resources for the country development and can accelerate economic growth through its spillover effects. For instance, Mongolia's mining sector is attracting foreign direct investment, which in turns contributes to economic growth (Figure 4.3). Since 1990, the country has received over US$1.6 billion in foreign direct investment from 96 countries through 6,066 foreign- invested companies. Around 80 percent of this amount came in the last six years.[6] Of these total FDI inflows, minerals, mines, and the oil sectors together accounted for 43.8 percent, light industry 5.6 percent, the banking sector 5.5 percent, the construction sector 3.5 percent, animal-originated product processing industries 5.5 percent, and the remaining went to the trade and service sectors.

4.13 On the other hand, the "resource-curse" effect common to resource-rich countries can lead to resource diversion from productive uses towards rent-seeking activities and patronage, with a strong deterioration of governance. Having a long term strategy for the mining sector along with appropriate risk mitigation mechanisms to ensure the prudent use of mineral revenues over time is imperative in order to sustain high levels of growth. Chapter 5 of this report looks at the issues related to natural resources management in Mongolia.

Being vulnerable to exogenous shocks

4.14 The geography and natural resource bias in the Mongolian economy make it susceptible to exogenous shocks that can have significant adverse effects on growth[7]. Natural disasters can affect growth in a variety of ways. They affect output and incomes, and can destroy physical capital, which unless replaced, will have longer term effects on growth beyond the immediate effects on income. In Mongolia, dzuds have in the past directly affected about half a million rural people. Consecutive dzuds in the winters of 1999/2000 and 2000/2001 killed 7 million head of cattle and other livestock, representing a 30 percent drop in total livestock. The agriculture sector registered a drop in real value-added of 40 percent

[6] Source: UB Post Newspaper, January 11, 2007 "96 Countries invest in Mongolia". http://ubpost.mongolnews.mn/main

[7] This is supported by both country-specific studies and cross-country comparative analyses.

between 1999 and 2002. The prolonged impact of these two dzuds on production lasted until 2004, by which time the livestock herd was slowly recovering to its pre-dzud level. After the disastrous 1999/2001 dzuds, many rural people migrated, at least temporarily, to urban areas. In one year, the rural population fell by almost 10 per cent. Some have returned to their rural livelihoods, but most have stayed. The population of Ulaanbaatar has grown from 0.8 million in 1999 to about 1.5 million today, which was accompanied by rapid urban creep associated, in particular, with the Ger areas in the outskirts of the capital.

4.15 *Negative terms-of-trade shocks directly reduce real income and the resources that are available for investment and consumption.* The evidence on the adverse effects of terms-of-trade shocks on economic growth is also strong. Of particular interest is the finding that the secondary effects of negative shocks in terms-of-trade, measured as the impact of shocks on the rate of growth of GDP, can be very large.[8] Mongolia's income is directly affected by the level of copper and gold prices. Copper exports were valued at $648 million in 2006 or 41% of total exports earnings. In addition, Mongolia economic growth responds strongly to commodity price levels, through the direct effect of prices on mineral production and the indirect effect on output that results from additional investment inflows that occur in response to higher mineral prices.

4.16 International experience suggests that the poor are disproportionately affected by exogenous shocks and Mongolia is no exception. Shocks can affect poverty through the destruction of assets of the poor or near poor and through direct income losses, lower overall growth in the economy, higher inflation, and lower government social spending. Research shows that normally these shocks increase the incidence of poverty. For instance, the poor households in Mongolia were more affected by dzuds than the rest of the population. Indeed, herder households constitute the single largest group amongst poor. The recent World Bank Poverty Assessment (2006) for Mongolia found that of all households with household heads who were engaged in some form of economic activity, the herder households had the highest incidence of poverty (41.2 percent). Analysis of HIES-LSMS data indicates that livestock mortality shocks translate directly into lower consumption levels for herder households. A counterfactual simulation of the impacts on poverty shows that, in the absence of livestock mortality shocks in 2002, the incidence of poverty among herder households would have been lower by 2 percentage points. Indeed, shocks tend to hurt the poor disproportionately because they generally have limited labor skills, they rely heavily on public social services, and their consumption basket is heavily weighted toward food. Moreover, the poor have limited savings to draw on in response to a shock and limited access to credit. The poor also are the most adversely affected by their inability to buy fuel (mainly firewood) for heating stoves during the coldest winter months when they need it the most and market prices of these rise beyond their affordable means. The provision of public utilities (such as adequate heat, water and sanitation facilities) to the rural poor across this vast country with such a low density of population is particularly challenging as well.

[8] For example, Collier and Dehn show that, for a sample of cases where the direct income loss from negative export price shocks averaged 6.8 percent of GDP in the year of the shock, the loss of income through the reduced growth channel over a four-year period amounted to about 14 percent of initial output. This secondary impact is, moreover, asymmetric, because positive price shocks were not found to increase the rate of growth significantly.

THE INTERNAL GEOGRAPHY OF ECONOMIC GROWTH IN MONGOLIA

Migration, Urbanization and Urban Concentration

4.17 As a country of nomadic herding traditions, Mongolia has a highly mobile population. With the exception of Ulaanbaatar—the capital city—and a handful of other cities, the distinction between urban and rural areas is not sharp in Mongolia. Provincial urban centers are small towns, with populations varying between 15,000 and 25,000. During the early transition, migration to rural areas happened as a way to cope with loss of urban income and service disruption. Since then, rural-to-urban migration has dominated population movements, with migration intensification in the wake of severe winter storms that cause drastic losses of livestock, but reverse waves of migration occur when people return to rural areas and resume herding.

4.18 In 2005, 60 percent of total population was living in urban areas. In addition, since the beginning of the 1990s, there has been increasing concentration of economic activities and population in Ulaanbaatar. Since 1993, while overall population has been growing at a relatively slow pace (by 16%), population in Ulaanbaatar has increased by 70 percent, fueled by in-migration. Conversely, rural population growth has been stagnant or even decreasing and so is the population in other urban centers. Economic activities have followed a similar pattern. Ulaanbaatar's share of total GDP reached 60 percent in 2004, whereas it amounted to only 47 percent of total GDP in 1999. A few places outside Ulaanbaatar retain economic activities, because of their specific strategic location such as located close to the border, next to mineral resources or natural resources such as in the Khovsgol Lake area.

4.19 What is causing this urbanization and urban concentration? And should further urbanization and urban concentration be encouraged? In other words, has Mongolia reached its optimal level of urbanization and urban concentration or is there space left for Ulaanbaatar to grow further? If urbanization is concentrated in the capital city, what should be the policy response towards Mongolia's existing secondary cities? In addition, while economic growth matters, disparities and equity dimensions in rural Mongolia should also be considered[9]. These are the questions which are discussed in this section.

Mongolia's urbanization rate is high and on the rise

4.20 Relatively to their GDP per capita, transition countries are over-urbanized, with a higher share of urban population than is typical for their income level, because of the planned drive towards industrialization under socialism (see Box 4.1). Mongolia is no exception: whereas for centuries, Mongolia's economy had been based on nomadic pastoralism, during the planned and centralized economy period, the country attempted a shift towards agriculture and industry. Collectivization carried out at the end of the 1950s drew former nomads into structured cooperatives in order to breed livestock. State farms were developed and arable land was extended. Land use was confined to *soum* brigades, and herding migration was limited to four moves per year. Many of Mongolia's secondary cities which exist today had expanded during the Soviet period with the support of central planning which dictated the

[9] "Equity" is defined as an equal access to opportunity (cf. *Equity and Development*, World Development Report 2005).

establishment and location of industrial firms. For instance, mining, processing and energy firms were built up in the industrial complexes of Ulaanbaatar, Darkhan, Erdernet, Choilbaisan and Baganuur.

4.21 As a result, Mongolia urbanization rate was remarkably high at the beginning of the 1970s, reaching 45 percent. This share has regularly increased over the decades to reach 60 percent in 2005, making Mongolia one of the most urbanized among countries with an income per capita in the same range. The urbanization trend was further reinforced by the removal of population movement restrictions in place before 1991, which controlled migrations especially to Ulaanbaatar. The Mongolian Constitution, which was approved in 1992, declares that "Every Mongolian citizen has the right to choose where to live in Mongolia"[10].

Migration and urbanization have gone hand-in-hand

4.22 During the early years of Mongolia's market economy, reverse migration from urban to rural areas was dominant following the dismantling of the state cooperatives. Livestock privatization attracted large numbers of households who had lost their jobs in state-owned enterprises to migrate to the rural countryside. This resulted in an increase in the number of herder households, from 17 percent of total households in 1990 to 35 percent by 1998, with most of this growth concentrated in 1990-92. At that time, Mongolia was one of the only developing countries where internal migration to rural areas exceeded migration to cities.

Box 4.1: Urbanization in Transition Countries

Relative to their GDP per capita, the transition countries are over-urbanized. They have a higher share of urban population than is typical for their income per capita, party as a result of the planned drive towards industrialization under socialism. While central planning dictated the establishment and location of industrial firms, many of the urban expansion and related developments that would accompany market-based urban growth, and that would normally have responded to household demands, were relatively suppressed. In particular, urban land was more heavily tied up for industrial use than is typical in market-based cities. Where privately-owned housing was a relatively illiquid asset, because of administrative regulations and other factors suppressing the development of a housing market, the residents of state or enterprise-owned housing also had little residential mobility.

While access to urban infrastructure (such as water, sanitation, electricity, and district heating) was provided to a fairly high share of the urban population in most of the region at the time of the transition, this urban infrastructure was heavily subsidized. Few systems remained commercially viable when state subsidies were reduced. For example, the economies of the Central Asian republics of the former Soviet Union (FSU), were so heavily industrialized that upon liberalization they inherited the rigidities which hampered the supply response in creation of jobs, housing, land, and urban services. Poverty in that region has, therefore, been greater than an economic depression alone would have implied.

Source: World Bank (2006) "Dimensions of Urban Poverty in Europe and Central Asia Region," World Bank Report, 2006.

4.23 However, the devastating effects of droughts and dzuds during 1999-2002, combined with the virtual collapse of livestock cooperatives and associated management and support services, decimated much of the livestock, especially those of the relatively inexperienced

[10] There still exist some formal conditions to get permission to reside in Ulaanbaatar (see "Internal Migration and Urbanization in Mongolia: Analysis based on the 2000 Census", NSO 2003)

herders. As a result, the initial urban-to-rural movement again reverted back to rural-to-urban migration. Other factors, including insufficient quality of education and health services, and lack of work in rural areas, also contributed to this migration. In 1998-99 alone, the rural population fell from 50 to 41 percent of the total population.

4.24 *Over the medium-term, rural to urban migration is likely to continue*. Because of Ulaanbaatar's "primate city" role (given by the fact that it is more than twice as large as the next biggest city in the country) and the spatial characteristics of Mongolia's economy, it is unlikely that its population will decline through reverse-migration flows from urban to rural directions (as was the case in the early 1990s). Today, Ulaanbaatar is the primary destination for migrants countrywide and is expected to remain so. This and the main secondary cities (Darkhan and Erdenet, for example) will have to be well-managed to enable the exploitation of scale economies: livable and—perhaps even more importantly—well-connected to larger cities. While their livability will depend on city governments, their connectedness to other, especially larger, cities will depend mainly on national and provincial governments. Success depends on good management at the city level, and sound planning and infrastructure investments at the provincial and national levels.[11]

Table 4.1: Urban Population Dynamics among Asian Countries

	GNI per capita 2005	Population Growth rate	Proportion of total (%)	Growth rate (%, 2000-2005)
Cambodia	380	2.4	19	5.5
China	1,740	0.7	39	3.2
Indonesia	1,270	1.3	46	3.9
Lao PDR	440	2.3	21	4.6
Malaysia	4,960	1.9	64	3
Mongolia	710	1.3	57	1.4
Myanmar	n.a.	1.1	30	3.1
Papua&New Guinea	660	1.1	13	2.3
Philippines	1,250	1.8	61	3.1
Thailand	2,750	1	32	1.9
Vietnam	620	1.3	26	3.2
Average	1,610	0.8	41	3.1

Source: Kharas and Gill (2006), "An East-Asian renaissance: ideas for economic growth", World Bank.

Urban concentration is taking place around Ulaanbaatar

4.25 Most of this urbanization is taking place in Ulaanbaatar, the capital city, with a population which increased from 586.2 thousand in 1990 to 965.3 thousand in 2005. In 2003, 40,000 people moved from the countryside to the capital city, while only 690 Ulaanbaatar residents moved away from city. In 2005, about 38 percent of Mongolia's population was officially living in Ulaanbaatar. This is hardly surprising, given the city's overwhelming primacy in Mongolia's economy and society. Almost 54.2 percent of national GDP (of MNT 1,227.5 billion) is produced in the capital, which also accounts for 84.2 percent of total

[11] See Kharas, Homi and Indermit Gill (2006). "An East Asian Renaissance: Ideas for Economic Growth" World Bank, 2006, Chapter 5 on Cities.

industrial output (of MNT 1,457 billion) in 2005. It is the seat of the central government and of most institutions for higher learning.[12] Almost all trade flows also go through UB (imports and exports), with the exception of the aimags that are immediately bordering with China and Russia.

4.26 *Population growth has been stagnant in aimag centers*. According to administrative definitions, aimag centers are defined as urban jurisdictions because they have administrative centers. This is despite the fact that in many cases they do not satisfy the other criteria set up in the Law of Mongolia on the legal status of towns and villages[13]. In practical terms, there is a widely recognized difference between the capital and "primate" city, Ulaanbaatar (UB) and the two secondary centers of Darkhan (77,000 people) and Erdenet (74,000 people) on the one hand, and the much smaller aimag centers on the other. These are sometimes defined as 'semi-urban', on the grounds that they perform a limited number of 'urban' functions within their regions, such as Choilbaisan (38 thousands) and Khovd (31 thousands). Urbanization dynamics reveals that population growth is stagnant in most of these towns. In recent years, migration to Ulaanbaatar has increased while in the above four biggest secondary cities, there has been a net out-migration of people. *Overall, the population living in aimag centers has dropped by 10 percent since 1993.*

4.27 The Law on Regional Development Management and Regulation (2003) aims to implement the Government's Regional Development concept which recommends the reorganization of the aimags into four regions, namely, Western, Hangai, Central and Eastern regions, with Ulaanbaatar as the fifth, and separate, administrative unit in Mongolia. Two towns within each of the four regions were identified as "pillar cities" who would be the main recipients for public investment. Master plans for each of these centers have been prepared by their respective local authorities that together estimate their infrastructure investment needs to be in the order of US$94 million.[14] These exclude investments that need to be made to ensure for geographical connectivity between these pillar cities and Ulaanbaatar. These demarcations were formulated prior to the ongoing mining boom in Mongolia. If one were to use market competitiveness, emerging migration, population densities, and potential for agglomeration benefits as a basis for regional decentralization, one would get a different picture of Mongolia's geography than the one envisaged in the *Regional Development Law* that was formulated in 2003.

Understanding firm location decisions in Mongolia

4.28 What are the factors which actually drive firm location decision in Mongolia today? In a market economy, firms make their location choice based on its economic advantages. Box 4.2 presents taxonomy of the various groups of determinants of firm location. While historically, firms chose to locate in places that had some natural advantages, as cities grew and developed, factors related to the firms themselves rather than their external environments have tended to matter instead.

[12] Mongolia Environment Monitor 2004
[13] In that sense, there may well be an overestimation of urbanization in official figures.
[14] See World Bank Infrastructure Strategy (forthcoming, 2007), Cross-sectoral issues chapter.

4.29 Before the transition to a market economy, decisions for firm or industry location were made according to principles of central planning. For instance, during the Socialist period, Darkan was the construction materials manufacturing capital of Mongolia, supplying goods to the Council of Mutual Assistance (CMEA) common market within the Soviet Union and its satellite countries. Khovd, in western Mongolia, also supplied construction materials for Mongolia Western's aimags. Choilbaisan was the center for mineral processing factories in that part of the eastern part of the country. When central planning was dismantled and market-based urban rules applied, existing secondary cities were unable to respond to household basic infrastructure needs while their industrial production suddenly shrunk as the economy was adjusting to its comparative advantage. Left without subsidies, most of these centrally-planned enterprises defaulted on loans and closed operations, thereby contracting the job market and resulting in out-migration primarily to Ulaanbaatar or neighboring soums.

Box 4.2: How Do Firms Decide Where to Locate? Agglomeration Economies

Two main groups of factors influence location decisions by firms. The first includes those that are external to the firm. Some regions have a natural advantage that makes them relatively more attractive to different types of firms. Initially, the conditions for the mergence of agglomeration economies might be due to natural endowment that historically encouraged early settlement and economic activities. These "*first nature geographies*" (Venables, 2003) include sheltered harbors, natural resource endowments, access to inputs, proximity to markets and availability of basic infrastructure. The initial benefits can trigger a self reinforcing process that leads to the emergence of urban-industrial agglomerations to the point where the initial advantage responsible for the growth of the center is no longer dominant.

These processes of agglomeration are supported by public infrastructure, especially in the transport sector. Krugman (1991) shows that manufacturing firms tend to locate in regions with larger market demand to realize scale economies and minimize transport costs. If transport costs are very high, then activity is dispersed. In the extreme case, under autarky, every location must produce everything locally. If transports costs are negligible, firms may be randomly distributed as proximity to markets or suppliers will not matter. Agglomeration occurs at the intermediate transport costs especially when the spatial mobility of labor is low. Low transport costs allow larger scale production, which in turn creates investment activities in other industries. This allows firms to realize *pecuniary externality benefits*. Availability of good infrastructure also increases the potential for input diversity, a larger labor pool, as well as the probability of technology diffusion through interaction and knowledge spillovers between firms. Thus improved accessibility has the effect of reducing geographic barriers.

Second, there are reasons for locating in a certain region that are more specific to the firm's production process and its interaction with suppliers, customers and competitors. These are production externalities which relate to the dynamics that directly affect the firm's microeconomic decision making. Most fundamentally, clusters of firms that are predominantly in the same sector take advantage of *localization economies*. They include sharing of sector specific inputs, skilled labor and knowledge, intra and inter-industry linkages, opportunities for efficient sub-contracting, access to suppliers and informational transfers.

Finally, a larger overall size of the urban agglomeration and its more diverse industry mix is thought to provide external benefits beyond those realized within a single sector or a tight buyer-supplier network. These benefits are called *urbanization economies.* Larger cities have greater diversity of firms. This allow greater specialization since it enables small, innovative firms to access a larger pool of potential buyers and complementary services that cannot be provided in-house. Larger cities also provide a larger home market for end products, make it easier to attract skilled employees who are attracted by urban amenities not available in smaller towns, and support a large number of complementary service providers.

Source: Deichmann, Kaiser, Lall and Shalizi, 2005, "Agglomeration, Transport, and Regional Development in Indonesia", World Bank Policy Research Working Paper, 3477

4.30 The secondary cities which are showing signs of development today are the ones benefiting from natural endowment and/or location advantage (the so-called "first nature

geographies"). For instance, proximity to mining resources such as Erdernet city which has developed along with the development of the copper mine or proximity to a border which creates opportunities for trade such as Khovd in the West, which shows recently signs of development in light industry and construction, or potentially Zamyn-Uud border city in the southern part of Mongolia, located at the border of China and close to the Uyu Tolgoi copper mine. First nature geographies can be also related to infrastructure and in particular transports costs. As explained in Box 4.2, in the extreme case of autarky, every location must produce everything locally. By contrast, no transport costs would entail en even distribution of firms throughout the country (everything hold constant). In Mongolia, given road infrastructure poor conditions and the huge territory, transport cost, especially on the West-East axis, are very high. In that sense, one can indeed attribute the development and survival of many Mongolian towns to high transport costs which prohibit the region to rely on distant suppliers.

4.31 By contrast, Ulaanbaatar concentrates the country nationwide opportunities for firm production externalities. As for all cities, Ulaanbaatar has historically developed on the ground of some natural advantage. Founded in 1639 as a monastery, the capital city moved around 20 times along with nomadic traditions before settling in its present location in 1778 on the bank of the Tuul River. It was positioned on the caravan route between Russia and China, and developed as a trading centre, particularly from the 19th century. Since then, production externalities (see Box 4.2) have taken over natural advantage in Ulaanbaatar, although the Capital location on the route between China and Russia still plays a central role in the city development.

Congestion, in-Migration and Urban Poverty

4.32 The highly skewed population distribution and migration towards Ulaanbaatar has important implications in terms of congestion and urban poverty. Congestion refers to increased costs associated with crime, grime and time. It can undermine efforts to exploit scale and agglomeration economies. There is evidence that congestion and pollution are on the rise in Ulaanbaatar (see also Table 4.2 for a comparison of Ulaanbaatar's urban congestion and pollution with that in selected developed countries). Air pollution is fueled by burning of coal for heating in Ger areas. Water pollution originates from surface water due to untreated sewage, and groundwater due to prevalence of pit-latrines. Soil/land pollution is due to open dumping of solid waste (See Box 4.3 on access to basic services). In addition, anecdotal evidenced suggests that (i) crime has risen and that (ii) commuting time has increased.

Table 4.2: Pollution in Ulaanbaatar Needs Urgent Attention

	Mongolia	G7
Particulate matter in the air (mg/cu.mt)	131-162	45
Sulfur Dioxide (mg/cu.mt)	9	19
Nitrous Oxide	25	56

Source: Mongolia Environment Monitor (2004)

4.33 Although as a whole, poverty incidence is lower in Ulaanbaatar than the national average (27 and 36 percent respectively), the ongoing in-migration and impact on urban poverty has significant implications for economic policy. Migrants are concentrated in the

under-serviced peri-urban *ger* areas, where poverty is also higher, and face specific non-monetary poverty issues[15]. According to the 2004 UNDP report on Urban Poverty and Migration, 80 percent of migrants settle in ger areas, where half of the people are poor. 37 percent of migrants are poor in terms of consumption expenditure, 55 percent in terms of access to services and 31 percent are poor in terms of social inclusion. Migrants face a higher probability of social exclusion or lack of capability (e.g. lower access to health insurance due to lack of registration, lower access to quality education due to overcrowded schools, lower number in adequate housing and lower access to basic infrastructure as migrants concentrate in ger areas). To explain this pattern, the report also stresses that over the years the reasons for migrating have shifted, away from educational purposes toward more economic factors such as: employment location, better livelihoods, and access to markets. Migration patterns thus suggest revealed preferences for locations where economic opportunities exist. In addition, the report shows that migrants in Ulaanbaatar are less educated than non-migrants leading to more poverty and less access to services among the migrant population. An important corollary is that migrants are poorer not because they are migrants, but because they have lower educational levels, for example. Migrants seem to have the same opportunities as non-migrants, but because they seem to lack the proper qualifications to take advantage of these opportunities.

4.34 Overall, *Ger* areas can be defined as pockets of poverty whose residents, despite representing a relatively wide range of income levels and occupations are especially vulnerable because of their living conditions. In-migration which is concentrated in these *Ger* areas has put pressure on existing health and education services, and has increased the demand for basic infrastructure, such as access to water, waste management, sanitation, heating, health, education (See Box 4.3). Migrants pose a specific policy issue, because they tend not to be registered, they tend not to have access to services they are entitled to. Combined with the fact that a majority of migrants are less educated, in-migrants are likely to remain in poverty under the current status quo situation.

Box 4.3: Access to Basic Infrastructure, Health and Education Services and Land Ownership in the *Ger* Areas

Water provision in *ger* areas is generally considered insufficient. It is estimated that *ger* areas residents get about 8-10 litres per day (2-4 times lower than the WHO minimum requirements). Drinking water is supplied through communal kiosks, which, at least in the more central areas, appear to be reasonably accessible (i.e. not too far and not overcrowded); although in some areas the kiosks close during the winter season because they are inaccessible to the tankers. Surprisingly, the consumption levels of water are low. It is not clear whether this is due to the quality of the drinking water being provided or its consumption pattern.

By contrast, **sanitation** is perceived by Ger residents to be a major problem. Most residents use pit latrines, but poor construction, unsuitable soil conditions and growing population density mean that surface and groundwater contamination are increasingly common. In addition, the largely inefficient pit latrines fill up quickly and there are very limited reliable support services from the municipality or elsewhere to empty them periodically. In some areas, marshy soil conditions make it impossible to dig pit latrines at all.

Solid Waste removal is also seen by Ger residents as a key problem. Households living in the unfenced outlying areas do not have access to any such services. Those living on fenced plots in registered streets are entitled to waste collection services that are to be provided by the districts for which they pay a fee to the *khoroo*. However, these services are not highly rated by residents, and it is not uncommon for them to stop

15 Ger area refers to Ger settlements in the city's outlying areas in zones that have the disadvantages of urban life, such as overcrowding and the high cost of food and services, and some of the hardships of rural life, including exposure to harsh weather conditions.

Box 4.3 (continued)

paying the fee when the waste collection teams do not arrive. Overall, it is estimated that only 40 percent of households have access to waste collection services in UB, although this may well be an overestimate in view of the perceived inefficiency of the services.

Heating was identified as one of the key issues in the last WB poverty assessment. Unlike other countries, poor households in Mongolia spend an exorbitant share of their income on heating for the long and harsh winters. Unlike in other developing countries, where the food bill accounts for over three-quarter of basic consumption needs in poor households, a reasonable basket of minimal needs in Mongolia consists of only 44 percent food items and 56 percent non-food items (of which heating supplies is a significant component). Despite its good intentions, the existing system of subsidies in the energy sector is not targeted at poor or vulnerable consumers. Mongolia's population has relatively good access to electricity, although there is insufficient generating capacity in many rural areas. Given the harsh winters, the poor households in Ulaanbaatar easily spend at least one-fifth of their total consumption over winter months on heating fuels which are primarily dirty fuel. The social costs of dirty fuel (e.g., health costs, productivity losses and environmental damage) are huge, justifying some forms of public-sector intervention.

Many **health** problems in the ger areas are linked to lack of safe drinking water, sanitation facilities and solid waste removal. Incidences of diarrhea, dysentery and hepatitis are much higher than in the rest of the country. . The main problems with access to health services are lack of relevant documents, lack of registration for migrants, lack of awareness of the existence of entitlements. While up to 1990 health services used to be free for all, they now depend on having health insurance. There are provisions for full or partial exemption from payment of the health insurance fee for some groups (children, pensioners, disabled and unemployed people). These groups also are entitled to access to free treatment and medicines, or refunding of some medical expenses. However, these entitlements are only available to those who are registered in the health insurance system. Services provided by family clinics are highly rated, but again, access is only possible for those who have health insurance. For the poorest groups, the health insurance fees are considered to be unaffordable.

Education is very important in Mongolia, and a major reason for moving to UB. It is also a main strategy for the household to move out of poverty. In *Ger* areas, in-migration of households has increased the number of children, which far exceeds the capacity of local schools – reflecting insufficient planning capacity at the municipal level, and perhaps also limited decision-making power at the district/khoroo levels, which cannot respond to local needs and priorities. Class overcrowding and teaching quality are perceived to be low, and families that can afford it prefer to send their children to the city centre, where enrolment is often achieved with the help of friends or relatives. About 40 percent of children in *ger* areas are estimated to walk for over 30 minutes or take public transport to reach their school. This increases costs, and about one-fifth of poor households with school-age children have one or two children that have dropped out of school. Most of these households are not aware of entitlements to free school supplies (notebooks, bag, pens and pencils for up to 16,000 MNT), or not are accessible to them since they are typically non-registered migrants.

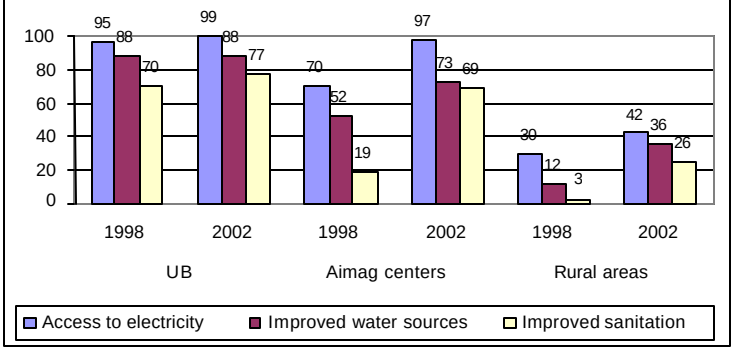
The Land Privatization Law came into effect in 2003. It specifically confers the right to own land to every family officially registered in their administrative units. All households in UB are entitled to 0.07 ha, and to date land privatization in apartment areas has been completed. In the course of this process, residents of central areas living in 'unfit' accommodation (mainly *gers* but also other makeshift dwellings) have been evicted and relocated to peripheral areas. Cadastral registration of land in peri-urban areas has also been completed, and an initial land market is emerging, although transactions took place even before the land law implementation, especially involving wealthier city residents securing land for summer houses. The privatization of land for residential use was a one-off exercise which did not involve payment of fees. However, land for agricultural use requires buyers to register as a company.

In *ger* areas, land privatization is related to the plot enclosed by the *hashaa* (fence). Informal criteria for eligibility used by *khoroo* governors usually include the existence of a fence, whether the resident household is registered and pays waste collection fees, and whether they have the relevant documents for the certification of land ownership. Unregistered migrants are clearly excluded, and so are the poorer non-migrant households. Free registration has ended in 2006, but there remains anecdotal evidence that land speculation is rampant in *Ger* areas.

Rural Mongolia sees disparities and poverty as well

4.35 The World Bank Mongolia Poverty Assessment (2006) found that "A composite profile of a poor Mongolian is a person who lives in rural areas, has many children, works with livestock and has a lower secondary or less education." There are important differences in per capita GDP and poverty incidence between Ulaanbaatar and the rest of the country, where Ulaanbaatar features the highest per capita and lowest poverty rate and rural areas the lowest per capita income and highest poverty rates. Using household disposable incomes as the basis, one arrives at the same regional ranking. Disparities between the capital city and the rest of the country are less pronounced in terms of household disposable income. Household incomes outside Ulaanbaatar are 80 percent that of the capital city, on average. Using GDP per capita as the basis, this share drops to 38 percent (Tg 847,000 in Ulaanbaatar vs. Tg 447,000 in other regions of the country in 2002). Given the high share of the migrant population in Ulaanbaatar (UB), especially in the winter months, who are primarily involved in service sector activities the value added in the UB area gets translated into a more equal household disposable income distribution (via remittances and transfers from their primary work location) than simply taking an average of the GDP generated in each region of the country.[16]

Figure 4.4: Basic Infrastructure



4.36 Poverty incidence in rural areas is higher than in urban areas (43 percent versus 30 percent in urban areas).[17] Herders constitute the largest group amongst the poor and of all households with household heads engaged in some form of economic activity; herder households have the highest incidence of poverty. While infrastructure access has improved between 1998 and 2002, rural areas lag behind. The 2002 LSMS Survey conducted by NSO shows that basic infrastructure access has increased markedly between 1998 and 2002 (Figure 4), especially in aimag centers. In 2002, 97 percent of households have access to electricity; compared to 70 percent in 1998. Water access has also improved (73 percent in 2002 compared to 70 percent), while access to sanitation recorded the greatest increase (from 19 to 69 percent between 1998 and 2002). Rural areas, largely composed of herders, have also recorded an improvement in basic infrastructure. Yet, the level of access remains relatively low.

4.37 As for telecommunication, the tele-density outside Ulaanbaatar remains low, where 10 percent of population subscribes to mobile or fixed telephones (Table 4.3). Mobile technology penetration is higher than fixed technology, accounting for 63 percent of total phones

[16] There remains the need to examine any data limitations and gather more detailed breakdowns on the composition of regional GDP and population in order to explain this significant disparity between the relative per capita GDP and household disposable incomes over time in Mongolia.

[17] This result is different from other transition economies, where urban poverty is more important.

subscriptions. Yet this share is lagging behind the share of mobile phones in Ulaanbaatar which is as high as 81 percent.

Table 4.3: Regional Tele-density

2004	Tele-density	Mobiles
	% population	% total
Western	6%	51%
Hangai	9%	56%
Central	16%	73%
Eastern	8%	58%
Ulaanbaatar	49%	81%

Source: World Bank Staff

4.38 Finally, equity is a concern in rural areas. As explained in the last poverty assessment report for Mongolia (2006), rural households have less access to education. Despite progress in school attendance in the past few years, rural students are still at a disadvantage. In particular, rural students do not have equal access to upper secondary education because rural schools shut down Grades 9 and 10 during the 1997 reorganization and rationalization reform while consolidated urban (aimag center and city) schools have only limited spaces. Attrition rates are significantly higher among rural children and educational quality, measured by examination results, is significantly worse in rural schools. Students in rural schools perform less well in examinations than students from urban areas; furthermore, examination performance in poorer soums is significantly worse than that in richer soums.[18] In addition, poverty directly, through out of- pocket and opportunity costs, and indirectly, through parental background, contributes to dropout at all levels of schooling. Rural students who tend to perform worse and drop out after Grade 8 are highly likely to be poor. This attrition or dropout raises concern given its long term implications from the vicious circle or intergenerational transmission of poverty. For all the good intentions it may have, the rationalization and reorganization effort initiated in 1997 seems to perpetuate the widening gaps in educational outcomes between urban (aimag centers and cities) and rural (soum) schools.

POLICY RECOMMENDATIONS

4.39 Mongolia should take more advantage of its unique location between Russia and Mongolia by exploiting more systematically its position of a transit corridor for trade between

1. Recent analysis shows that children attending soum level schools are 13 percentage points less likely to score an 'A' on the central exams[18], as a result of a lower access to quality education. Students in Ulaanbaatar schools score better than those in schools located in all other regions of the country. The differences in education performance across the latter regions are not noticeable. As a result of these differences in educational performance between UB schools and others, there are significant divergences in the net enrollment rate between the countryside and the rest, which appear in lower secondary levels and accentuate in upper secondary schooling. These results hold even after controlling for a number of factors, including parental education, poverty and gender.

its two neighboring economic giants and beyond. Mongolia's geography is unique in terms of its strategic location in the world. Being landlocked initially appears as a constraint, but may in fact be turned into an asset. Policies should, therefore, focus on facilitating trade on the China-Russia corridor, both internally by improving internal infrastructure and by streamlining regulations and bureaucratic procedures, and externally by looking at possible trade facilitation agreements and regulations harmonization. To this end, the Government needs to place adequate emphasis on developing internal transport infrastructure on the basis of an infrastructure strategy that aims to connect markets and maintain supply chains, while at the same time maintaining fiscal sustainability. Trade is significantly affected by transportation costs, so investments in railways and road—both construction and maintenance—are crucial for keeping these costs down.

4.40 The recent Mongolia Infrastructure Strategy Report of the World Bank report (2007) identified the three major challenges that the Mongolian infrastructure sector faced today, namely, (a) more closely aligning prices with costs; (b) improving efficiency and governance; and (c) planning better. The resulting investment priorities in this sector that this report recommends are the following:

- Maintain the existing stock of infrastructure;
- Exploit the potential of recent mining discoveries, and
- Avoid national electricity shortages.

The overall focus here should be on maintenance (especially on roads), planning for private investment in mining areas, and for new sources of power.

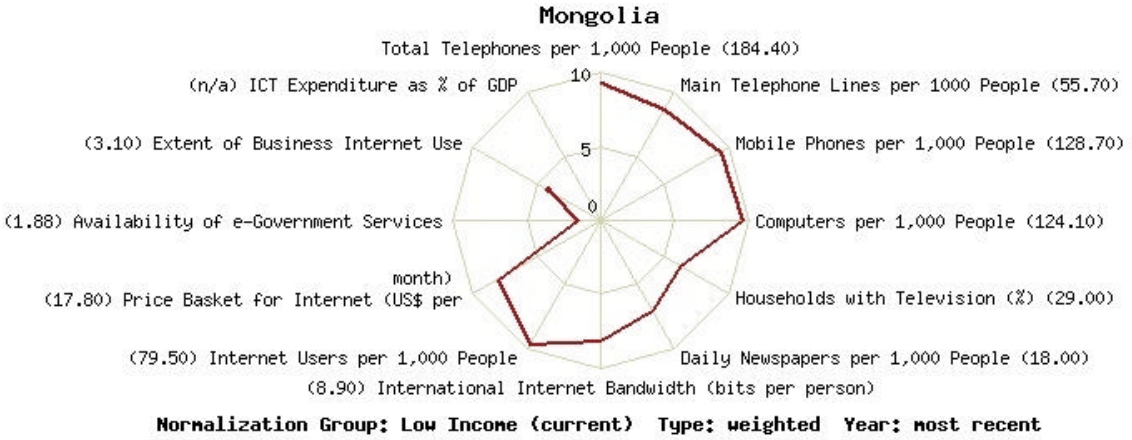
4.41 *Government policies should accompany rather than attempt to offset the ongoing migration and economic concentration.* On the location of "growth pole" in Mongolia, given Ulaanbaatar's "primate city" role and the spatial characteristics of Mongolia's economy, it is likely that the population residing in this city will continue to grow, not only due to demographics, but as a result of the continued migration that the market forces bring. This implies that Government policies should not aim to limit this agglomeration effect that is already underway, but should focus instead on improving the provision of basic services and public infrastructure in Ulaanbaatar, and in particular in the Ger areas. In the rural areas, where most of the poor are, the focus should be on improving both access and quality of education in order to improve equity in rural areas and facilitate migration to areas where the particular skills of a person are in most demand.

4.42 *To this end, non-sector specific investments and policies focusing human capital and infrastructure investments with large positive externalities should be preferred.* Many of the big failures of regional development policies concern large industrial investment projects. By contrast, infrastructure investments are location-specific, but their returns are not specific to a particular activity. For example, a road built in a region with good tourism potential will increase economic activity in this sector, but will not only be used by the tourism industry but by others. Similarly, human capital investments are multi-purpose in the sense that they are neither activity- nor location-specific. Most of the successful examples of regional development (for example Ireland, the United States) result from exceptional emphasis on such non-sector specific investments by the government.

4.43 Choices to prioritize connectivity with secondary cities should be made on the basis of the existing natural comparative advantage (such as, mining resources, trade corridors, supply-chain hubs, among others). Connecting secondary cities with markets and in particular Ulaanbaatar will increase their chance of development. However, such an infrastructure policy might very well be unaffordable, given the country's vastness. The use of Information and Communications Technology (ICT) infrastructure could be made to "virtually" connect the whole country and its people and deal with national security considerations.

4.44 Indeed, the role of ICT in facilitating the acquisition, dissemination and use of knowledge across a country is critical in today's rapidly growing Mongolian economy, more so given the vast geographical territory that needs to be covered by information. This will influence the way in which manufacturers, service providers and the government (central, provincial and local) are organized and how they perform their functions. ICT plays a crucial role in reducing barriers of cost, time and space to economic transactions, allowing for mass production of customized goods and services and compensating for limited factors of production. Research shows strong linkages between ICT and growth. Figure 4.5 shows that while Mongolia has shown progress in telephone services access relative to other low-income countries, there is the need to improve availability of e-government services, business internet use, and media access (newspaper and TV) across the country. *This should not only be translated into the need for computer hardware and software, but for institutional reforms in key areas such as ensuring timely access to the public of information on government operations, strategies and action plans.*

Figure 4.5: Scorecard on Information and Communication Technologies, Selected Variables,
(Most Recent Period)



Note: Values in parenthesis denote actual values for Mongolia for the most recent period for which data are available. Each of the 80 variables in the World Bank's Knowledge Assessment Methodology (KAM) is normalized on a scale of 0 to 10 for the low income group of countries as defined by the World Bank. The fuller the scorecard, the better poised a country is to embrace the knowledge economy. But an economy may not necessarily aim for a score of 10 on all variables because the shape of these scorecards a dependent on the peculiar structural characteristics of an economy or by trade-offs that characterize different development strategies.

Source: World Bank, Knowledge Assessment Methodology, http://worldbank.org/kam.

4.45 ***Where then should the infrastructure be located?*** The World Bank's Infrastructure Strategy Report for Mongolia, 2007 (forthcoming) identifies three groups of factors as key determinants of infrastructure needs. Namely:

- To undertake *urban-led infrastructure investments.* Given the unique feature of the Mongolian urban system, Ulaanbaatar will continue to exert significant pull of physical and human capital, and be the main driver of Mongolian urbanization. Following the demographic projections it can be estimated that by 2015 the bulk of the urban infrastructure assets and investment needs will be concentrated in Ulaanbaatar city.

- To undertake investment to bring about *Connectivity*, with the rest of the world and, strategically, within Mongolia. Mongolia would need to carefully examine the opportunities presented by its unique geographical location. It is next door to the most dynamic economy in the world in recent years-China. It is situated between two large economies (China and Russia) whose bilateral trade as recent as 2005 increased by 37 percent to reach US$29 billion. Infrastructure investment and planning would have to incorporate how Mongolia can exploit its landlocked status and turn it into a driving force by connecting to the markets in the region. This potential is already being manifested in the robust growth of transit rail traffic.

- *Infrastructure to support mining sector development and the growth of vertically and horizontally integrated industries* (including service sector activities). The ramping up of mining activities in Mongolia would require new infrastructure (especially, roads, railway, energy and water) to get the outputs to markets in China and elsewhere. Reducing transport costs between poor and rich regions is similar in effect to a reduction in intra-provincial trade barriers or the removal of a tariff. The local taxation regime and existence of user fees for utilities needs to be factored into the cost benefit calculations when determining public infrastructure investments in order to build supply chains and access to markets. A case can be made, therefore, for prudent government investments in roads, railways, and other infrastructure of a public-good nature (i.e. that benefit non-mining sectors in the area and improve the general investment climate) to support the mines.

4.46 In all its investment decisions (and especially in the third category above), the government should be cautious about putting its scarce public funds into areas where the private sector may be willing to participate, invest and provide the infrastructure and related-services themselves. But even in these instances, there remains a role for the Mongolian Government to ensure that the minimum quality standards, as per international benchmarks, are met in the infrastructure that the private sector builds and operates. Chapter 6 examines issues the Government and other stakeholders must consider in deciding the strategy towards the country's mining sector and natural resource management going forward—all this without loosing sight of the ultimate goal of maintaining high and broad-based GDP growth in a market-oriented setting.

Box 4.4. Regional Road Network on the Way

In fact, a regional road network is already in the works with the recent announcement in January 2007 that China plans to invest 2.3bn yuan (294m US dollars) to upgrade highways linking border trading areas in Xinjiang Uighur Autonomous Region, west China, in the coming five years to facilitate booming trade with neighboring countries. The Chinese central government and the regional government of Xinjiang will jointly fund the upgrading of 802 kilometers of highways linking the region with neighboring countries such as Russia, Mongolia, Kazakhstan and Kyrgyzstan. Xinjiang has a border that extends for 5,600 kilometers and has opened 15 customs posts and 101 highways for passenger and cargo transportation between the region and neighboring countries.19 China's trade with central Asian countries has boomed in recent years. China-Kazakhstan trade volume hit 6bn US dollars in 2005 alone. In the first three quarters of 2006, China-Russia trade volume hit 24.64bn US dollars, up 18.8 per cent. The year-long trade volume is expected to hit a record high of 36bn dollars. Statistics from China's General Administration of Customs show that trade volume between China and Mongolia from January to September 2006 hit 1.13bn US dollars. In addition, between 2006 and 2010, Mongolia and China plan to build six international roads to link the two countries in order to promote bilateral trade cooperation.20 In particular, four truck roads and two passenger vehicle roads are planned. Since 2001, a total of 1.64 billion yuan—(roughly 210 million USD)—has been spent by the Provincial Government of Inner Mongolia, China to build eight roads with a view towards developing the international transportation infrastructure between China and Mongolia. In 2006, a passenger tumover of 1.37 million people and freight turnover of 2.73 million tons was registered through the checkpoints of Inner Mongolia, China with the border with Mongolia. These developments provide a significant window of opportunities for Mongolia.

4.47 Finally, the role of the labor market in accommodating rural-urban migrations, the ongoing economic concentration in Ulaanbaatar, as well as to respond to specific disparities and equity issues faced in rural areas is essential. Simply providing the infrastructure for people to migrate between rural and urban areas may not solve the issues of poverty and inequity of opportunities between Mongolia's rural and urban inhabitants and its migrant population. It may, in fact aggravate already stretched public services in the urban areas, especially Ulaanbaatar, and lead to further problem like crime and discontent that accompany situations where people become discontent with the migrants coming in and the previous inhabitants of urban centers that are receiving them at growing rates. The next chapter provides a detailed analysis of the labor market with a view towards narrowing down what these specific policy interventions should be to address these challenges and help in creating employment and sustained growth in such a geographically dispersed country as Mongolia.

[19] Source: Xinhua news agency, Beijing, January 1, 2007.

[20] This was said by Zyan Gefen, Deputy Chief of the Department of Road and Communication of the Inner Mongolia, China, at a forum held there on building inter-continental roads to link Asia with Europe. *Source*: *Mongolia MONTSAME News Agency, January 30, 2007*

5. A LABOR MARKET IN TRANSITION

Broad-based growth in Mongolia will require addressing the binding constraint in the labor market: the inadequacy of the skills produced by the education and training systems to the needs of the labor market. Addressing this constraint tackles the two major challenges in the labor market, namely, the underutilization of human capital—particularly the high incidence of idleness among the working-age population—and the mismatch between the skills that workers bring to the labor market and those demanded by the labor market. To this end, policies that focus on human development need to be instituted with a view towards removing existing skills mismatches and bringing about flexibility in the labor market. These skill enhancement efforts must be especially directed to the migrating population, who are mainly coming from rural areas, as well as the urban youth.

5.1 The previous chapter has shown that in this vast country one is seeing rapid rural-urban migration take place, with most of the traffic to the Ulaanbaatar metropolitan area. While this is good from the point of view of availability of labor for the growing urban economic activities, it calls for important policy interventions to address the skills mismatch that one is seeing today and to create more jobs and broad-based growth in future. Chapters 1and 2 showed that two major challenges in the Mongolian labor market are: (i) the underutilization of human capital—particularly the high incidence of idleness among the working-age population—and (ii) the mismatch between the skills that workers bring to the labor market and those demanded by the labor market. This chapter examines the labor market demand and supply and provides evidence of a significant skill mismatch at all levels.

SKILLS MISMATCH AT ALL LEVELS

5.2 The changes in the structure of the economy, greater openness and competition, as well as greater use of technology have all resulted in increased demand for skilled and educated labor in recent times. Research suggests that there are several types of skills that one needs today in order to enhance a person's ability to do well, either as entrepreneurs, or workers in the private sector (See Box 5.1). In today's complex and changing environment, the challenge is to build these skills that allow young people to think critically and creatively, to process information, to make decisions, to manage conflict, and to work in teams. The ability to process information starts to develop early in school. Cross-country evidence suggests that an education system that emphasizes rote learning of facts fails to develop these skills.[1]

[1] These programs have been well tested in developed country settings such as the Netherlands and the United States and are now beginning to emerge in developing countries as well. Source: World Bank, *Development and the Next Generation*, World Development Report, 2007.

Box. 5.1: Skills and Knowledge have many Aspects

The types of Skills discussed in this Report follows from the definition in the World Bank's most recent *World Development Report 2007*. They include *thinking skills* (critical and creative thinking), *behavioral skills* (perseverance, self-discipline, teamwork, the ability to negotiate conflict and manage risks), *specific knowledge* (including numeracy and literacy), and *vocational skills* (a mix of specific knowledge and skills to perform jobs that rely on clearly defined tasks). *Basic skills* denote the set of minimal abilities needed for further learning, work, and life, including numeracy and literacy and basic levels of behavioral skills such as perseverance, self-discipline, and self-confidence. *Post-basic skills* include thinking skills, higher order behavioral skills (decision-making skills, teamwork, the ability to negotiate conflict and manage risks), specific knowledge applied to real-life situations, and vocational skills.

Source: World Bank, Development and the Next Generation, World Development Report 2007, pp. 71.

5.3 As a result of past successes in education policy, Mongolia produces a large number of school graduates every year—77 percent complete lower secondary school or higher—relative to labor market demands (more on that below). This naturally produces some friction in the labor market whereby many young graduates end up doing jobs requiring skills and education levels below theirs. Data from World Bank Investment Climate Survey (2004) shows some evidence of over-qualification, particularly among vocational education graduates. About 22 of secondary school graduates and 13 percent of college graduates feel their jobs require a lower level of education than theirs (Table 5.1). There is also evidence that employers tend to hire college graduates because they signal the skills employers are really interested in rather than their direct value to business (more on that below). Most workers with vocational education (81 percent) feel they are overqualified.

Table 5.1: What is the Most Appropriate Level of Education for Your Work?

	Tertiary	**Vocational**	**Complete secondary**	**Incomplete secondary**	**Primary**	**None**	***Obs.***
Education level completed							
Tertiary	**87.19*** **	0.92	8.7	2.06	0	1.14	*437*
Vocational+	18.84	**0*** **	57.25	15.94	2.17	5.8	*138*
Complete secondary	10.23	0.53	**66.84*** **	13.05	1.76	7.58	*567*

*Notes: *** notes that the difference across rows is significant at 1%. Stars in parenthesis show the significance level that values in diagonal differs from the other values in a same column. (***); (**); and (*) indicate significances at 1 percent, 5 percent and 10 percent, respectively.*

5.4 According to the LSMS 2002-03, about 57 percent of workers are family labor or self-employed (79 percent in rural areas). The importance of agriculture is declining but it continues to be the main sector of employment (40 percent), and it is low skill-intensive (small scale and low technology). And the sectors that have increased the most in terms of employment (mining, construction and retail & wholesale trade) are not high skill-intensive. The skills-content of non-agricultural jobs is relatively low (Table 5.2). About 47 percent of employees hold skilled occupations.[2] The highest proportion of skilled jobs is in the health

[2] Skilled occupations are: legislators, senior officials, managers, professionals, technicians and associated professionals. Unskilled occupations are: clerks, service and sales workers, craft and related trade workers, plant/machine operators and assemblers, and elementary occupations.

sector (80 percent), education, public administration and business activities sectors respectively.

Table 5.2: Schooling and Skill Content of Non-agricultural Wage Sectors

	Urban		Rural		National	
	Skilled Occupation (%)s	**MYS**	**Skilled Occupation (%)s**	**MYS**	**Skilled Occupation (%)s**	**MYS**
Mining & Quarrying	25.2	11.6	8.1	10.4	20.3	11.25
Manufacturing	14.0	10.8	17.9	10.9	14.5	10.82
Electricity, water supply	36.2	11.4	22.7	11.6	34.2	11.39
Construction	21.9	10.6	3.0	7.1	20.2	10.32
Wholesale & Retail trade	39.5	12.1	12.7	9.8	36.3	11.83
Transport & Communication	21.7	11.2	18.1	10.8	21.0	11.1
Business activities	61.6	12.7	46.3	11.7	59.9	12.55
Public administration	59.1	12.9	62.3	11.5	59.9	12.54
Education	76.2	13.2	68.5	12.1	73.5	12.81
Health	85.0	12.9	68.6	11.4	80.4	12.49
Other services	22.9	11.2	27.3	11.4	23.4	11.27
Others	49.7	12.1	20.0	8.7	46.0	11.7
Total non agricultural wage sector	*46.6*	*12.1*	*49.0*	*11.3*	*47.1*	*11.9*

Notes: MYS refers to "Mean years of schooling". Source: LSMS (2002).

5.5 The returns to higher education beyond primary education for an individual are large—but this has to do more with the 'signaling' effect of higher education. The returns to education only payoff once upper secondary education is completed and they are particularly large for higher education graduates working in the urban private sector (Table 5.3). Of the total vacancies submitted in 2005 by employers to the Labor and Social Welfare Assistance Division, 17 percent were for higher education graduates, 22 percent for vocational graduates and 51 percent for secondary education graduates. But the high premium attached to higher education is not mainly a reflection of the valued added of higher education degrees but rather the 'signaling' effect of higher education—employers tend to hire higher education graduates because they signal the skills employers are really interested in (IT, English, thinking and behavioral skills as defined in Box 5.1 above). Mongolia has done relatively well in producing a large number of high school graduates and beyond.

Table 5.3: Returns to Education by Level

(Relative primary education or less) (%)

	National	**Urban**	**Rural**	**Private**	**Public**
Lower secondary	0	0	0	58	0
Upper secondary	32	37	24	65	0
Vocational	38	42	31	74	0
Diploma	66	71	61	121	32
Bachelor	[85	93	69	147	51]

Note: Estimates are based on log wage regressions for wage earners aged 25-65. Source: LSMS 2002-03

SUPPLY-SIDE FACTORS IN THE LABOR MARKET NEED ATTENTION AS WELL

5.6 To improve the skills of young people for work and life, education opportunities must be made more relevant to the needs of all young people. This involves improving educational preparation for adolescence by providing quality basic education for all. It also involves meeting the growing demand for post-basic skills, by providing diverse and flexible learning options in upper secondary and tertiary education; by implementing a relevant curriculum that teaches practical subjects, thinking skills, and behavioral skills; by blending the academic and vocational curricula, and by connecting school and work. And second chance education opportunities must also be provided for young people who failed to acquire basic skills the first time around, such as equivalence education and skills training programs.[3]

Formal education opportunities and curricula

5.7 Mongolia's education system does well in terms of producing school graduates, but it does not prepare them well for work and life in today's changing economy. Although there are large disparities between urban and rural areas, overall 77 of percent of children complete lower secondary school while 52 percent complete upper secondary school. The latter would be significantly higher if there was no quota on the number of children that are allowed to move to upper secondary. These figures reflect the effect of past education policies focused on getting children through school. However, the educational preparation of adolescents for additional learning, work and life is poor. The National Assessment of Students' achievement (NASA) was conducted in 2005 among students at the end of basic education (8^{th} grade) in mathematics and civic education, based on the adaptation to the local context of two international tests, TIMSS and CIVED.[4] The instruments did not only test knowledge but also, and more importantly, the ability of students to apply this knowledge (i.e. competencies). The average learning achievement for mathematics and civic education was 50 percent and 47 percent respectively, with large disparities between urban and rural areas (Table 5.4).

Table 5.4: Student Achievement by School Location

	Ulaanbaatar	Aimag centers	Soums	Total
General /A+B/	49.5	49.2	42.7	48.6
Mathematics /A/	51.4	51.2	42.3	50.3
Civic Education /B/	47.2	46.9	43.2	46.6

Source: Education and Evaluation Center (2006).

5.8 Particular attention is needed to enhance the skills of adolescent youth. Recent survey data suggest that in algebra (where, on average, students perform better than in geometry), these students did relatively well in knowledge items (67 percent) and in performing routine procedures (55 percent). They had difficulty, however, with complex procedures (21 percent) and problem solving tasks (42 percent). Civic education also needed attention. One cannot

[3] Much of the framework and examples in this section is taken from the 2007 World Development Report (World Bank, 2006c).

[4] Civic education included domains in politics and democracy, Human rights and freedom, State structure and Mongolian history.

therefore get away from arriving at the conclusion that Mongolia's schools seem to be failing to prepare young people for work and life in today's rapidly changing economy.

5.9 Fortunately, if accompanied by the right reforms in curriculum and teaching practices, the expansion of the school system to 12 years in 2008 could improve the preparation of adolescents for further learning, work and life by providing them with 9 years of basic education. Mongolia initiated a standards-based curriculum reform in 1998 and a year later, began standardized testing. The Secondary Education Standards were introduced in 2003. These standards emphasize the importance of comprehensive skills—learning to know, learning to perform, learning to exist and learning to socialize. General subject areas do include practical knowledge areas such as science and technology and English. While these standards are consistent with the acquisition of skills that are needed for work and life, the enacted curriculum and teaching practices are not very consistent with these goals.

5.10 In higher education, new higher education standards are being developed but have not yet been introduced. These standards emphasize important skills, such as pluralism, foreign language competence, computer skills and team work skills. In practice, however, the names of academic programs have changed but their content has not. In vocational education, there remains the need to revise the curriculum to accommodate it to the needs of a market economy. The Government is cognizant of this and many of these challenges are being addressed in the new Education Sector Master Plan (ESMP 2006-2015) and the Millennium Challenge Account (MCA) proposal for the reform of the TVET sector.

5.11 *The school curriculum and teaching methods have not kept up with the new demands in the labor market.* The curriculum continues to be too theoretical and focused on traditional academic subjects, while teaching continues to teacher-centered rather than interactive, as well as to encourage memorization rather than critical and creative thinking and individualistic learning rather than teamwork. While IT and English language subjects are part of the curriculum, teachers are generally not well prepared to teach them. Also, in many cases, the teaching of IT is very limited by the poor availability of computers in schools. The teaching of thinking and behavioral skills can be integrated into every aspect of the curriculum through discovery-oriented teaching methods that include interactive learning, applying knowledge to real-life problems, integrating teamwork and peer tutoring into the learning process, and inviting student input into the structure and subject matter of lessons.

5.12 It should be noted that the implementation of student-centered teaching methods will take time and will require substantial investments in pre- and in-service training. In the short run, teaching life skills as a separate subject (e.g., health, citizenship, or financial literacy education) can be a practical option. For example, Japan and Malaysia have recently included life skills as a subject in their secondary school curriculum. To improve teaching, teachers also should have adequate materials and routine assessments of student progress be conducted. These assessments should focus more on the ability of students to use knowledge acquired. The Government is currently working on developing such a national assessment system for primary education. Such initiative should be extended to secondary education. IT can facilitate, but never replace, teaching and learning.

5.13 *The supply of vocational education does not serve the needs of the labor market.*[5] Upper secondary and tertiary education have to accommodate diverse student needs, interests, and capabilities. Vocational education should be part of a diverse system of learning options. Vocational education can be accessed after completing lower secondary or upper secondary, while technical education requires upper secondary. Vocational and technical education in Mongolia, however, only accounts for 9 percent of total enrollment in post-basic education, which reflects the heavy bias of post-basic education towards academic university degrees. Also, the system needs enough flexibility to allow students to experiment and develop their full potential. While technical education is fully integrated with higher education, vocational education in Mongolia, however, is a terminal track with no connection with technical colleges or the academic education track (secondary and higher education). Recent successful reforms in secondary education in other countries have upgraded previously terminal vocational tracks, allowing vocational education graduates entry to higher education after taking school-leaving examinations (e.g., Tunisia and South Africa).

5.14 In terms of quality and relevance of vocational education, there has not been any serious effort to update the existing vocational education curricula to the needs of the labor market. International evidence shows that effective feedback from the labor market and regular consultations with employers and alumni are indispensable for adjusting curricula to meet changing needs, as in Chile, where vocational training institutes are governed by representatives of employers, workers, and the government. Standard setting and quality assurance is a major weakness of the TVET system, and only technical colleges are subject to the accreditation system. Much could be done to improve vocational education through built-in quality control and competency-based skills testing and certification system.

5.15 Vocational fields of specialization are outdated and comprehensive skills are not present in the current vocational education curriculum in Mongolia. These comprehensive skills (such as subject knowledge in IT and English, as well as cognitive thinking and behavioral skills) are needed for vocational graduates to succeed in today's labor market. Recent successful education reforms in a number of countries are making the academic and vocational curricula more integrated, bringing more vocational content into the general curriculum (Malaysia) and more vocationally relevant academic subjects (Chile) into the vocational curriculum. New curriculum and teaching practices need to be accompanied by improved learning materials and facilities. The current facilities and equipment in vocational school are very old and outdated.

5.16 To facilitate transition to work life, the connection between school and work needs to be improved. This goes beyond just providing vocational education and involves strengthening the partnership between industry and schools. For example, Career Academies in the United States combine academic and technical curricula around a career theme and establish partnerships with local employers to provide work-based learning opportunities.[6] Universities and research institutes have contributed much to the growth of the Chinese economy. In Beijing, such institutions collaborate with local industry through joint projects

[5] A recent comprehensive analysis of Technical and Vocational Education and Training (TVET) has been conducted by the Asian Development Bank and the Ministry of Education, Culture and Science (2005).
[6] Kemple and Scott-Clayton (2004).

and technology transfers and establish firms (spin-offs) to commercialize their inventions. Some of those firms (Lenovo, Tongfang) are among the largest Chinese high-technology firms.[7]

5.17 *Currently, the higher education institutions do not fully serve the needs of the knowledge economy.* Universities are subject to an accreditation system since 1998, but this system is voluntary and very weak in terms of the assessment done.[8] In addition to introducing more student-centered teaching practices and more practical programs, the higher education system needs to be more flexible. Open systems can facilitate student mobility by recognizing relevant prior experience, degree equivalences, and credits earned elsewhere. In Thailand, for example, all courses in the entire national university system are credit-based. In Colombia, people already in the labor market can get university-equivalent certification through any accredited training institution. A well-designed and unified system of higher education admission tests is likely to be beneficial, because educating the most capable students can foster innovation, driving the economy. The U.S. state of Georgia recently reformed its tertiary entrance exam, which limited access and improved the quality of students. A remaining challenge, however, is to provide alternatives to those students that do not make the cut. A good example is the California higher education system in the U.S.A., which combines selective admissions to centers of excellence with more open admissions to other two and four year tertiary institutions.[9]

5.18 The expansion and improvement of vocational and technical education as well as higher education can be greatly facilitated by reaching out to the private sector. Public-private Partnerships (PPPs) allow systems to expand in a fiscally constrained environment. The private sector (including foreign institutions) is well established in the higher education sector (73 percent of institutions and 32 percent of students), but less so in the vocational and technical education sector (14 percent of institutions). PPPs can also improve learning outcomes and efficiency overall by increasing choices and injecting competition. For that competition to work, however, public institutions need sufficient autonomy and resources to manage for results and private institutions need to be accountable for meeting well-defined quality standards. International evidence shows that governments should provide information and quality assurance while promoting diversity. The Philippines and the Republic of Korea set quality standards lower at the entry point (licensing) to give new institutions the chance to grow, and later make the standards more stringent (accreditation) for both public and private institutions to allow fair competition.

5.19 With the ongoing recentralization reform in Mongolia, education institutions were given more autonomy. However, the current funding of public vocational schools, technical colleges and universities remains inadequate not only in terms of levels but also in their form—most of the funding depends on the number of students (per student grants in the case of vocational and technical schools and regulated fees in the case of universities) rather than on performance. The current accreditation system in Mongolia has very little effect on the public funding that an institution receives. In addition to linking public funding to

[7] Chen and Kenney (2005).
[8] See Asian Development Bank and the Ministry of Education, Culture and Science (2005) for details.
[9] See http://www.cpec.ca.gov/.

accreditation, the Government could also consider competitive funding like Indonesia did, for example, where about 25 percent of the recurrent budget to public universities is allocated through competitive funding.

Second chance education opportunities

5.20 Improving the skills of young people for work and life also involves providing second chance education opportunities for young people who failed to acquire basic skills the first time around. About 38 percent of 18- to 35-year-olds dropped out of school without completing basic education. Even among those who completed basic education, some seem to lack minimal levels of general skills—including numeracy and literacy and basic levels of behavioral skills such as perseverance, self-discipline, and self-confidence, and the technical skills to be productively employed. The needs of out-of-school youths are thus diverse because they leave school at different points in the schooling cycle, with different levels of skills attainment. Even among youths who have the same skills (or lack thereof), the second chances likely to be appealing and effective depend on the age of the young people. Finally, second chances also need to be tailored to the local environment, which might be rural or urban.

5.21 A policy and organizational framework for second chances—clearly linked to the formal school system and informed by the demands from the labor market and society—is missing in Mongolia. In its place are non-formal education and training programs that focus on disadvantaged youths but are not linked to each other or to the school system. Non formal education programs run in parallel to, and independent from, the formal school system. For those children and youths who are still in school but performing poorly, or have dropped out recently, one policy response is to offer remedial education to put them back on track. But identifying who needs such supplementary instruction is a key step. In some developed countries, such as Australia, Canada, and the United States, the results of standardized tests trigger a remedial education program. This will be easier to implement once standardized testing is introduced in Mongolia. In the meantime, another option could be to ask teachers to informally identify students that were falling behind, such as in the successful *Balsakhi* program in India.

5.22 To appeal to out-of-school youth, second-chance programs must take into account why young people dropped out or never attended school, the challenges they will face to stay in a program, and how they can be integrated into the formal education sector or find employment. All these vary by age, skill, and the local environment. *Equivalence and job training programs* may serve different youth populations, but their common aim of providing competencies for work and life requires a more integrated approach: literacy and equivalency programs that include life skills and vocational training, and vocational training programs that include life skills. Equivalence systems use more practical curricula, more flexible schedules, and less formal instruction methods than regular schools. They depend on a strong partnership between the formal education sector, private providers of programs, and prospective employers. Without this partnership, the graduates of equivalence systems will be left holding diplomas that allow neither reintegration into the regular school system nor employment in jobs requiring a certain level of competency.

5.23 *The mode of delivery must take into account why young people dropped out*. For example, to bring programs closer to homes in rural areas of Mexico, the *Telesecundaria* program offers lessons by video. To accommodate the pressure for adolescents to work, the Tutorial Learning System in Colombia allows students in rural areas and their facilitators to determine the preferred schedule and pace. Successful equivalence programs that hope to reintegrate people in the formal education system often use teaching methods that are similar to those recommended above for formal schools—student-centered learning, regular assessment, and remedial sessions to involve students in their learning progress. Programs for older youth, however, often use very different approaches. The Mexican National Institute for Adult Education (INEA) has developed an innovative education model for out-of-school individuals 15 or older to learn how to complete the equivalent of primary, lower secondary or upper secondary education. It provides a curriculum based on acquiring skills for work and life through a flexible system of modules—individuals can choose among the modules and the length of the program is attuned to their needs, covering subjects such as health and civic education, and vocational skills.

5.24 In terms of *job training*, firms in Mongolia do, indeed, respond to the inadequacy of skills of the workforce by providing training to their workers, but this response is limited and does not cover unskilled workers. According to the 2004 ICS, only 51 percent of firms provide some training. Larger firms that export, have foreign direct investment and adapt technology are more likely to train. However, almost none of the firms provide training to unskilled workers—who need it most. Their decision reflects the fact that the spillover effect of training is higher among skilled and educated workers. Hence, job training for unskilled workers is clearly needed, but public vocational training programs in Mongolia do not really help trainees. Mongolia has had vocational training programs since 2000, with very mediocre results in terms of making trainees more employable. Vocational training is conducted at the Vocational Training Centers (VTCs) in the form of non-credit courses with duration ranging from one to three months. There are no strict entry qualifications for taking up vocational courses. VTCs are mostly operated by private owners. This active private sector participation has been possible thanks to the Skills Training Voucher Program (STVP), but the potentially positive effects on training quality are minimized by the lack of a formal accreditation system.

5.25 With the new amendments to the *Labor Law*, the duration of job training is now allowed to vary by field, and vouchers given to trainees also vary accordingly. These recent changes, however, do not address the lack of relevance and impact of vocational training. Again, fields of training are outdated and do not reflect the needs in the labor market. Employers need to play a more active role in determining the types and contents of training programs. As with vocational education, the curriculum needs to be modular and competency-based rather than the current rigid field-based curriculum. Also, the successful experience of skills training programs, such as the *Jovenes* and *Entra 21* programs in Latin America, shows that training in technical skills alone is unlikely to pay off unless combined with thinking and behavioral skills and employment services, such as job counseling, which is currently lacking in the system. A system of skills assessment and grading of workers is not yet operational. Standards need to be developed and trainees assessed on those standards. This needs to be accompanied by a proper accreditation of training institutions to be able to qualify for the voucher program. The quicker the authorities begin to initiate the above reforms, the better

position will be the position of the Mongolian labor force to help alleviate the binding constraints to growth related to skills.

POLICY RECOMMENDATIONS

5.26 Given that the agenda for addressing the binding constraint to broad-based growth that emanates from the existing labor market in Mongolia, the following policies should be considered by the Mongolian authorities for implementation in the short run so as to have the greatest near-term impact on generating employment and fueling growth going forward. The rest of the policy actions will take more time to bear fruit, and must continue. Fortunately, with the recent formulation of the Education Master Plan by the Government, some of these are already under way.

To Improve the Educational Preparation of Adolescents, the Focus in the Short Run Should be on:

- Ensuring that general schools have the necessary resources to cope with the expansion of the school system to 12 years in 2008.

- As the school system expands, adapting the curriculum and teaching practices to the Secondary Education Standards (e.g. teachers training on student-centered methods, IT and English) and a student assessment system developed.

To Meet the Growing Demand for Post-basic Skills

5.27 Technical and vocational education needs to become a real alternative to (yet articulated with) the academic track, and produce skills that are relevant to the labor market. New guidelines for the sector need to be developed now and then implemented. Guidelines should cover the following areas:

- Occupational standards (with the input of employers) as well as a testing and certification system
- A modular, competency-based curriculum to attain those standards
- An accreditation system of TVET institutions
- Partnerships with employers to connect TVET institutions to the workplace
- Alternative forms of financing of TVET institutions (vouchers, performance-based financing and competitive funding)

5.28 Higher education needs to become the engine of the knowledge economy. To do so, the focus should be now on:

- strengthening the current accreditation system and make it compulsory
- introducing a well-designed and unified higher education admission test
- developing guidelines for alternative forms of financing (vouchers, performance-based financing and competitive funding) and partnerships with employers.

5.29 Over the medium run, new financing models need to be implemented, more student-centered teaching practices and practical programs need to be introduced, and the partnerships with industry strengthened.

5.30 **And for young people who failed to acquire basic skills the first time around** the focus right now should be on developing a coherent strategy for second chances that meets the diverse needs of youth, is clearly linked to the formal school system and informed by the demands from the labor market. The next step is to design and implement second chance programs—remedial education, equivalence education, literacy and skills training consistent with this strategy.

6. MANAGING NATURAL RESOURCES FOR LONG-RUN BROAD-BASED GROWTH

Unlike other East Asian countries, "natural capital" occupies the largest share of Mongolia's wealth. Within this category, its mineral resources take up the lion's share. Hence, Mongolia's economic development will depend on sustaining and enhancing traditional sectors, particularly mining and livestock, while nurturing new sources of growth and export earnings. The adoption of a stable, competitive and transparent legal, regulatory and fiscal regime for the mining sector will be essential for its continued growth and development. Investment agreements in the mining sector need to be structured to primarily define the basic rights and obligations of both the government and investors and to stabilize fiscal provisions upon which investment decisions are based. It is important to ensure that such agreements remain subordinate to existing legislation and apply to the sector as a whole, rather than provisions which result in discriminatory treatment of individual firms. The recent changes to the fiscal and policy regime in Mongolia undermine its competitiveness and could impact negatively on investor confidence which has been building over the period 2001-2005. The main issues that the Government might want to reconsider/reevaluate are the mining royalty rates, the windfall profits tax, and the share of equity participation by the State in mining projects.

6.1 It is undisputable that Mongolia's mining and natural resource sector will remain a dominant source of its long-term growth. But given that these are exhaustible resources—in the sense that once they are taken out of the ground they cannot be put back—it calls for a prudent strategy to use these resources efficiently over time and at the same time promote the vertical and horizontal linkages in production to generate broad-based growth in the economy. Failing to do this will lead to a tendency for mining to develop as an "enclave", an experience that many less-developed and isolated regions have faced in other countries. The capital-intensive nature of direct mineral exploration and extraction activities in these instances had not created as much broad-based employment and growth as was initially expected. Mongolia has the benefit of learning from these past experiences of others in making the most of its own mineral resources (including copper, gold and oil) as well as other natural resources from the long-term development point of view.

6.2 Mongolia's mining sector output has the potential to increase substantially over the next decade. It is projected to double or even triple from 2003 levels by 2010 provided large projects get development approvals and are successfully commissioned. To this end, it is imperative to provide a mining taxation regime that allows for efficient mining operations, encourages value-added processing, and encourages exploration, research and development (R&D) and, at the same time, generate revenues for the government to spend prudently. International experience suggests that almost all Governments of mineral resource-rich countries choose to have some specific provisions for Mining, and some Governments have

entirely separate but transparent mining fiscal codes. In analyzing mining tax systems, it is essential to look at the complete system of all taxes and fees rather than at individual rates in isolation. Need to estimate total effective tax rate (ETR) as a first step in comparing mining tax packages. ETR does not tell you about the timing of tax payments. For instance, a country that gives accelerated depreciation provisions gives mine operator a higher up-front revenue for the same ETR as a country that does not give this incentive. A mineral taxation policy which promotes resource wastage, e.g. royalties, levies and other taxes on revenue, and input taxes such as duties and land use fees cause companies to increase cut-off-grade and waste potentially viable resources. This results in reduction of the size of the resource, reduced total value of production and shorter mine life.

6.3 Common incentives that other countries have given to mining operators include: accelerated depreciation, loss carry forward, no-ring-fencing rules (i.e. level of consolidation of tax base. Ring-fencing favors existing operators and is complex to implement.), carry forward and amortization of exploration, feasibility and development costs, deductible environmental and closure costs, and deductible community and public infrastructure costs. Less common incentives include: fiscal stabilization, tax holiday or initially reduced rates, depletion allowances and loss carry back. Meanwhile, it is imperative to build capacity of tax agency, especially to collect the mineral taxes owed to Government under the existing tax laws. In addition, prudent management of windfall revenues and an internationally competitive investment climate in the mining sector is needed as well.

6.4 This chapter aims to assist in formulating a prudent long-term strategy for sustainable development and the use of natural resources in Mongolia, with particular attention to mining. To this end, one must appropriately define the "wealth" of the country using an analytical framework that incorporates the intrinsic benefits of these natural resources and costs of environmental degradation involved in their use. With this framework in mind, this chapter addresses the issues and policies that the Government may want to consider fostering the efficient and sustainable development of the Mongolian mining sector in an effort to bring about inclusive broad-based long-run growth. In addition, the chapter also looks at the country's wild-life and forestry resources , which provide rich additional sources of output and export diversification possibilities (as Chapter 3 showed) in the near-term, but also threaten Mongolia's biodiversity over the long-run if utilized inappropriately. Any strategy to develop the country's mining and natural resource sectors should take these related long-term sustainability issues into account. In Mongolia, this includes looking at the economic impact of illegal wildlife and forest resource trade, and factoring this into policy decision-making process.

ESTIMATING THE "TRUE" WEALTH OF MONGOLIA

6.5 The process of economic development and growth entails the conversion of Mongolia's abundant *natural capital* into *produced capital* (represented by man-made capital equipment and structures) and *institutional and human capital*. The sum of these different types of capital then provides a measure of the true "wealth" of the country. This framework clearly highlights the critical importance of managing a country's natural capital—both renewable and non-renewable—so as to ensure that an adequate rate of return is generated in the conversion process whereby physical and human capital are created. This will, in turn,

increase the overall wealth of the economy in an environmentally sustainable manner. Failure to do so may result in short-term growth that is instead accompanied by a reduction in overall wealth over the long term.[1] Before formulating a mining sector strategy, the government needs to recognize this trade-off and make every effort to incorporate this dimension into the strategy.

Table 6.1: Wealth Estimates for Mongolia

($ per capita, 2000)

Asset type	**$ per capita (2000)**
Subsoil assets	113
Timber resources	90
Non-timber forest resources (NTFR)	1,006
Protected areas (PA)	387
Crop land	405
Pasture land	2,779
Natural capital	4,780
Produced capital + Urban land	2,300
Intangible capital	1,160
Total wealth	**8,239**
Share Natural Capital	58%
Share Produced Capital	28%
Share Intangible Capital	14%

Source: World Bank, 2006i, Where is the Wealth of Nations? Washington DC.

World Bank Staff estimates.

6.6 A recent World Bank Report entitled "Where is the Wealth of Nations?" (2006i) estimates the "true" wealth for 120 countries using internationally available data. The study shows that the average Mongolian has a total "true" wealth of roughly $8,200 when defined to include physical (natural and produced), non-tangible and human capital (Table 6.1). This estimate includes not only *produced* assets, such as buildings and machinery, but also *natural* wealth in the form of land, forests and subsoil assets, and intangible capital, such as *human resources and institutions*.[2]

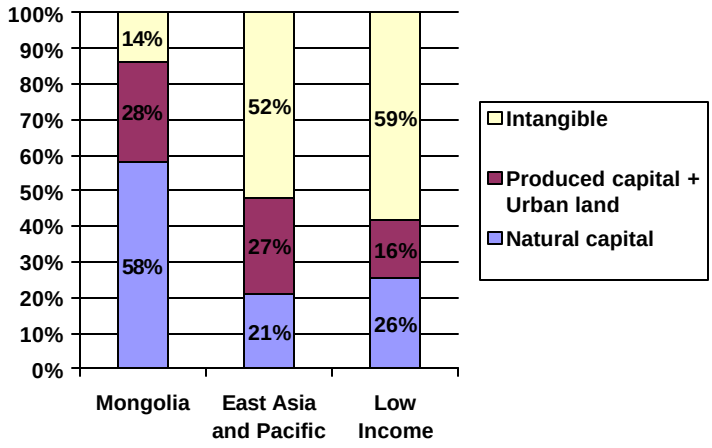
[1] Economic literature suggests that in order to measure social welfare correctly one should rely on wealth-like magnitudes. The fact that income or consumption does not have a direct welfare interpretation is highlighted in a seminal paper by Samuelson (1961). Equally important is the notion that wealth should be measured in a comprehensive way. Irving Fisher (1906) provided the original insight that current wealth equals the present value of future consumption. Fisher's argument was motivated by the need to find a measure of comprehensive wealth. This led to the intuition that the value of an asset is the capitalization of the stream of future services expected to be produced by the asset. For the relationship between future consumption and wealth to hold, it is important to ensure that the full range of assets which generate well being are included in the analysis. Fisher identified three types of assets: *immovable* wealth, comprising of land and the fixed structures upon it, *movable* assets or commodities, and *human* beings.

[2] In World Bank (2006i) natural wealth or natural capital is the sum of non-renewable resources (including oil, natural gas, coal, and mineral resources), cropland, pastureland, forested areas (including areas used for timber extraction and non-timber forest products), and protected areas. Most commercial natural resources are valued by taking the present value of resource rents—the economic profit on exploitation—over an assumed lifetime. While forests can, in principle, yield benefits forever if sustainably managed, we account for overexploitation by calculating the effective lifetime of the resource given current harvest rates. Agricultural land rents are estimated calculating profits from different types of crops, assuming that the products of the land are sold at world prices.

6.7 A quick glance at the wealth composition (Figure 6.1) for Mongolia shows that natural capital is a very important component of its wealth. Natural capital constitutes 58 percent of total wealth, produced capital accounts for 28 percent and intangible capital (a combination of human and institutional capital) for 14 percent. *The very low level of intangible capital is an aspect that makes Mongolia qualitatively different to the rest of East Asia and Pacific, where the largest form of wealth is intangible capital.*

Figure 6.1: Total Wealth Composition in Mongolia

(%, 2000)



Source: World Bank, 2006i, Where is the Wealth of Nations? Washington DC.

The efficiency and productivity of natural resource use has been low

6.8 According to the World Bank Study (2006i), across the world intangible capital was found to occupy the dominant share amongst the three main components of "true" wealth. Nearly 85 percent of the countries analyzed in this report attributed over half of their true wealth to intangible capital. This outcome validates the standard economic premise that human capital and other intangibles play a major role in economic development. While human capital helps explain a large portion of the variations in intangible capital, there are other factors that are relevant. The quality of institutions, social capital, and ultimately, the efficiency with which resources are used in the economy, all matter in this regard.

6.9 Available data suggests that Mongolia's public expenditure on education has been around 8 percent of national income and the level of human capital is high, however, the country's average intangible capital is very low at 14 percent (Figure 6.1) compared to the East Asia and Pacific region and low income countries averages. In other words, Mongolia is achieving extremely low levels of returns on its produced, natural and human capital

The values for non-timber forest resources and protected areas are estimated only crudely. In the case of non-timber forest products, world average values of benefits per hectare, distinguishing developed and developing countries are applied to a share of the country's forested area. Protected areas are valued using country-specific per-hectare values for cropland or pastureland (whichever is lower). For more details on estimation methodologies refer to World Bank, 2006a, *Where is the Wealth of Nations?* Washington DC.

investments.[3] This suggests that Mongolia's assets could be used more efficiently.[4] To further support the point that the productivity of investment in Mongolia has been very low as well compared to EAP and low-income country averages over the past 20 years Table 6.2 shows that the capital-output ratio for a number of countries. The ratio for Mongolia is much higher than those of the other countries in the region. The average capital-output ratio for the countries in East Asia and Pacific is 3.2, while Mongolia's corresponding value is 5.8. Estimates of *intangible capital* and produced capital over the past 20-year period also seems to suggest the inefficient use of the country's assets.[5]

Table 6.2: Capital Output Ratios for Selected Countries and Country Groups

Country	Capital output ratio
Mongolia	**5.8**
Thailand	3.8
Malaysia	3.4
China	3.1
Indonesia	3.0
Philippines	2.7
Low income (all regions)	**3.1**
East Asia and Pacific region	**3.2**

Source: World Bank (2006a) and World Bank (2006b)

6.10 How about *natural capital*? Table 6.3 identifies countries similar to Mongolia where pasture land is a very important share of the country's natural capital. (It is important to note that the countries shown in Table 6.3 span various regions and a variety of climate zones so comparisons should be made with caution.)

6.11 High income countries, such as Ireland, Belgium, Netherlands and New Zealand are characterized by very high value added in agriculture. Belgium and the Netherlands, in addition, have very high pasture land rents. The picture is very different in Central Asia and other developing regions. Table 6.3 suggests that Mongolia has the lowest level of pasture land rents (US$2 per hectare). The next lowest value is the one for Kazakhstan (US$7 per hectare). In addition, Mongolia's agricultural value added per worker is low if compared to other countries in the region such as Georgia, Uzbekistan and Kazakhstan. Only Kyrgyz Republic and Tajikistan have lower values.

[3] Produced capital plus land.

[4] In the World Bank study (2006i), a number of countries appeared to have very low or even negative levels of intangible capital. A low intangible capital is possible by construction because intangible capital is calculated as a residual—the difference between total wealth (the present value of future consumption) and the sum of produced and natural capital. It follows then that if tangible assets, such as buildings and machinery, and land assets, such as pastures, are used inefficiently, the effect will be captured in the intangible capital residual.

[5] *Produced capital* can be estimated using the perpetual inventory method (PIM) which computes the cumulative investments that took place in the past 20 years while taking into account asset depreciation (assumed to be 5 percent). Estimates for Mongolia show that, during the 1980s investment was very high (averaging 57 percent of GDP, a pattern that was common to many countries in the Communist block at the time.)

Table 6.3: Low Productivity in Mongolian Agriculture

Country	Pasture land share of natural capital (Percent)	Pasture land rent ($/ha)	Ag value added per worker ($)
Ireland	77%	542	..
Belgium-Luxembourg	71%	1596	38683
Uruguay	60%	64	6755
Mongolia	**58%**	**2**	**888**
Kyrgyz Republic	54%	43	845
Netherlands	46%	2849	38127
New Zealand	46%	336	25613
Georgia	45%	103	1195
Estonia	41%	558	3219
Albania	40%	521	1274
Kenya	39%	35	306
Poland	38%	747	1743
Tajikistan	36%	27	304
Latvia	34%	345	2110
Denmark	32%	3301	35252
Bulgaria	32%	265	5270
Argentina	27%	33	9085
Romania	26%	248	2527
Libya	25%	8	..
Jordan	25%	68	907
Uzbekistan	19%	57	1391
Kazakhstan	16%	7	1107

Source: World Bank (2006) "Where is the Wealth of Nations=Measuring Capital for the 21st Century" and World Bank staff calculations

What does all this mean? A counterfactual analysis

6.12 What if Mongolia's investments had been similar in terms of efficiency to other low income countries? Scenario analysis using the above-mentioned "Green Accounting" methodology shows that a level of produced capital per capita of US$2,300 would be producing a 2000 income of nearly US$ 730—an eighty-five percent increase compared to the actual 2000 income level of US$400. [6] If natural capital, and in particular pasture land, were productive as in other neighbor countries (see table 6.3), the income per capita would be even higher. Hence, more efficient use of Mongolia's pasture land could in fact yield higher agricultural output which would, in turn, lead to both higher land values and higher total wealth. This counterfactual analysis demonstrates that Mongolia's tangible assets have been unable to generate the level of output that similar levels of capital have generated elsewhere.

6.13 Results of deriving a counterfactual "true" wealth profile for Mongolia using the above "green accounting" methodology yields interesting results as well. Assuming that *produced capital* had been invested efficiently using a conservative capital-output ratio similar to the one for low income countries (i.e., a ratio of 3.1); this would result in a level of income of at least US$ 730. Using a Hamilton and Hartwick (2005) methodology where the

[6] This is a crude assumption but it is useful in highlighting the peculiarities of Mongolia: high historic investment levels that have generated very low productive capacity.

current value of wealth is equal to the present value of future consumption, and under standard assumptions[7], the total estimated "true" wealth generated by Mongolia's tangible assets would be as high as US$ 15,000. On this basis, a counterfactual wealth profile for Mongolia is shown in Table 6.4. Under this scenario, the level of intangible capital of 53 percent of total wealth would be very similar to Indonesia where natural resources (especially oil and crop land) also play an important role in its total wealth.

Table 6.4: Mongolia: Actual and Counterfactual Wealth Compositions

	Actual wealth composition		Counterfactual wealth composition	
	US$ per capita	Percent	US$ per capita	Percent
Natural capital	4,780	58%	4,780	32%
Produced capital	2,300	28%	2,300	15%
Intangible capital	1,160	14%	7,920	53%
Total "True" Wealth	8,240	100%	15,000	100%

Source: World Bank staff estimates.

ESTIMATING MONGOLIA'S "GENUINE" SAVINGS RATE

6.14 High savings rates have been the basis for sustained growth in East Asian countries. Mongolia's story tells us that the profitability of investments financed by this saving is of paramount importance. "Sustainable development" is defined as the situation where the benefits of economic development accrue not only to the present generation, but also the future generations to come. A critical aspect in sustainable development is the way in which a country manages its current national wealth or the rate at which a country spends its national wealth—where "true" wealth has been computed for Mongolia using the above methodology that accounts for the country's natural, physical and natural capital. Under this approach, if a country's "true" wealth is spent faster than it is accumulated, future generations will be worse off than the current ones. Any long term strategy to develop a country's natural resources, particularly its mineral resources, must take this consideration into account.

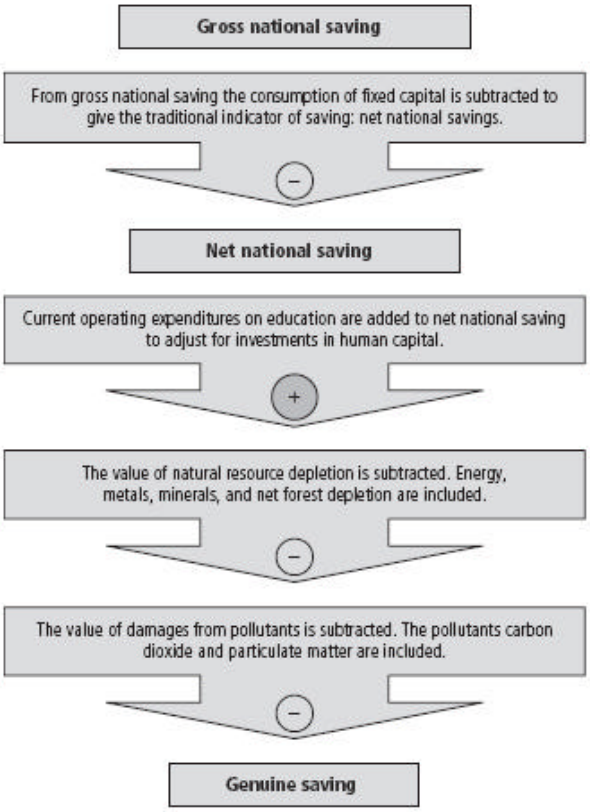
6.15 One way to measure the change in a country's wealth is by analyzing the standard national accounts. Here the "gross" national saving is defined as the total output produced that is not consumed. However, one downside to this measure is that it only includes produced assets and does not take into account asset depreciation. The "net" national saving can be obtained by subtracting depreciation of assets from the gross national saving. However, even this measure is far from perfect, since it doesn't include the human and natural components of wealth discussed earlier in the "true" wealth framework (a la World Bank 2006i). Indeed, components such as the environment, natural resources and human capital can provide a considerably more complex measure of sustainability then simply focusing on changes in

[7] Assumption used: consumption is 89 percent of GDP (equivalent to the actual level for the period 1998-2002), consumption is expected to grow at a constant rate, pure rate of time preference is 1.5 percent and elasticity of utility with respect to consumption is 1. In addition, Hamilton and Hartwick show that their result holds when asset prices are efficient (exhaustible prices follow the Hotelling rule, for example), and the economy exhibits constant returns to scale.

produced assets measured by the concept of net savings. These are incorporated in the concept of "genuine savings" that one can derive as well.

6.16 The concept of *genuine saving* is discussed in more detail in the World Bank publication entitled--"Where Is the Wealth of Nations?" (2006i). This was previously known as "adjusted net saving", first developed by Pearce and Atkinson (1993) and Hamilton (1994). Genuine saving includes wealth considerations in terms of net saving, as well as changes in natural and human capital. Figure 6.2 illustrates how the concept of genuine saving is derived.

Figure 6.2: Methodology to Estimate the "Genuine Savings" in an Economy



Source: World Bank (2006i), Where is the Wealth of Nations? Washington DC.

6.17 Table 6.5 summarizes the genuine saving for Mongolia, East Asia and Pacific region and the group of low income countries for 2004. With an adjusted net saving of 26.6 percent of GNI, Mongolia is slightly above the East Asian average of 23.9 percent and considerably above the average for low income countries of 7.3 percent. However, even with Mongolia's rather strong adjusted net saving for 2004, three issues are worth emphasizing.

- *First*, Mongolia's saving rate declined by nearly one third in 2004, when accounting for depreciation of produced capital, the depletion of natural resources, particularly minerals, and damage from global and local air pollutants.

- *Second*, the depletion figures for Mongolia do not include soil depletion, for which information is not available. Mongolia, however, depends heavily on agricultural land resources. A relatively high deforestation is likely to be associated with soil depletion and a more careful study of this phenomenon is required, and

- *Finally*, given Mongolia's rather unique wealth composition—with natural capital accounting for almost 60 percent of the true wealth of the country—it implies that natural resource management is particularly important for Mongolia. Indeed, mismanaging these resources could have major negative implications for Mongolia's long run growth.

Table 6.5: Measures of Saving in Mongolia

(% of GNI, 2004)

National Accounting Aggregates, 2004	Mongolia	East Asia and the Pacific	Low Income countries
Gross saving	40.8	39.1	22.7
Consumption of fixed capital	9.3	10.5	9.2
Net saving	31.5	28.6	13.5
Education expenditures	8.1	2.3	3.4
Energy depletion	0.9	4.1	6.7
Mineral depletion	8.4	0.4	0.4
Net forest depletion	0.0	0.0	0.7
CO_2 damage	3.8	1.2	1.1
Particulate emission damage	0.0	1.2	0.8
Adjusted net saving	**26.6**	**23.9**	**7.3**

Source: World Bank, 2006, Little Green Data Book, Washington DC

6.18 Thus, in order to develop a strategy to use Mongolia's natural resources efficiently, one needs to keep in mind the fact that Mongolia's abundant natural capital must be used in a manner that makes the productivity of the economy (and the corresponding utilization of its physical capital including land) high and depletion of its "true" wealth low. Boxes 6.1 and 6.2 summarize the status of Mongolia's urban and rural Land, institutions for its management and related constraints. While increasingly visible and tangible, the economic impacts of natural resource mismanagement in Mongolia remain difficult to assess mostly due to the lack of reliable and accessible data on environmental and natural resources management monitoring data and information. However, existing empirical and anecdotal evidence clearly indicates that illegal logging and wildlife trade, artisanal gold mining, and water and air pollution are responsible for the increasing economic costs of environmental degradation.

Box 6.1: Urban Land was Free in Mongolia until 2005

The Mongolian Constitution provides for the private ownership of non-pastoral land. Nevertheless, all land was owned by the State until 2002, when the Parliament approved both the new Land Law (regulating possession and use of state-owned land) and the Law on Mongolian Citizens' Ownership of Land (regulating allocation of land to Mongolian families for ownership). The 2002 legislation thus introduced measured reforms towards improving security of tenure for residents in Ger areas and for formalizing transfer of possession rights. The 2002 Land Law recognizes the right of possession holders to transfer the certificate of land possession to others (after approval by the relevant local authorities), or to use it as collateral. However, it only gives households the right of ownership, not individuals. The implementation of this law remains constrained by burdensome permission requirements and political consensus remains fragile on land-related issues, especially on how to proceed with more ambitious reforms. Meanwhile, an informal land market has allegedly been in existence, especially in the Ulaanbaatar area, since 1994.

Both the mining cadastre and land registration system are still in their infancy. Without effective coordination of the two registries (i.e. sub-soil mining rights and surface rights – free-hold land) rent seeking and conflict can arise that result in costly delays in mining operations since a mining company needs "land use permission" from the private owner and local authorities for the surface land necessary for its processing plant and for surface infrastructure needed for its mining operations. A national cadastre has been established at the outset of implementation of the land privatization, with priority given to the Ulaanbaatar municipality. In ger areas there are a number of barriers to land registration; an inefficient process for issuance of land permits and residency certificates, high annual land fees and registration costs, and lack of public access to official land registry information.

In 2003, the local Representative Khural in Ulaanbaatar approved a land privatization plan whereby state-owned land that is to be privatized in and around the Ulaanbaatar area for household use in amounts to about 0.01 percent of the total land area. The privatization was to be completed by 2005/2006 but is still underway. Families in the capital city are entitled to 0.07 ha of land free of charge, while subsequent acquisitions of land will require payment. In aimag centers, families are entitled to 0.35 ha of land, while in soum centers they are entitled to 0.5 ha. This imp lies that a rural families' land entitlement may be five to seven times larger than that of an urban family. As a result, in Ulaanbaatar, about 90 percent of apartments in Ulaanbaatar became privately owned between 2003 and 2006, and 2,868 hectares of land have been privatized. Most of the privatization went on in the Ger districts, where 80 percent of residents now own their plots of land. Private ownership of land increased roughly 31 percent from 21,870 hectares in 2003 to 69,924 hectares in 2005.

Privatization of land was free up to 2005. However, individuals often incur administrative costs to acquire their land. The latest available estimates suggest that an additional 13,000 to 15,000 hectares of urban land was privatized in 2006—a rate lower than previous years. Economic entities are entitled to possession of land only; the ownership of the land stays with the local authorities. Economic entities are entitled to a possession certificate spanning between 15 to 60 years the first time the possession certificates is issued. Extension of the certificates can be issued up to forty years, and can be granted multiple times.

The housing finance market is still in an embryonic stage. There is little information on existing prices or trends in land and housing prices, and little clarity on how to value land for sale and purchase. To date, it remains unclear whether or not the 2002 legal framework is being effective in formalizing the existing real estate market as well as the implementation of the land taxation system. Some 18 to 20 percent of the GOM's revenue is expected to come from property tax associated with land. The authorities lack adequate capacity to assess and collect this tax at present. It is further complicated by inconsistent enforcement, and the fact that there is no publicly announced standard valuation system for commercial land in Mongolia. Under current land fee assessments, apartment dwellers, usually considered the higher income groups, are exempted from land fees as prescribed by the Land Law, as the land on which apartments are built is categorized as community land. In addition, 90 percent of the property tax values in the Ger districts of Ulaanbaatar are not collected. There are discussions ongoing within the Government to allow for a tax payment exemption for Ger area residents for the foreseeable future on equity grounds.

Box 6.2: Rural Land Management in Mongolia

The preference for a nomadic way of life in rural Mongolia, and the ethics of easy access and reciprocity, are the great strengths of the Mongolian pastoral economy. This commitment is reflected in the 1994 Land Law and the Mongolian Constitution. The existing legal framework and local attitudes stand in clear opposition to the implied goal of land registration and titling.

The *1994 Land Law* authorized local *soum* governors and *bagh* leaders to regulate pastoral land use, including seasonal movements and stocking rates, and to allocate land under "possession and use contracts". Anecdotal evidence suggests that many of the local officials are unaware of this mandate given to them, while others are not clear about the limits of this mandate. This Land Law was amended in 2002. The 2002 Land Law includes provisions specifying the authority to enforce seasonal use patterns rather than allocating possession over pasture. However, some ambiguities of the 1994 Land Law, particularly related to pastureland management, remain. Specifically:

- Absence of a clear definition of "common tenure land', "land for common purpose", "collective use of land", and "joint possession of land" by citizens.
- By designating all wells and water points as "common use resources", this provision seems to undermine the allocation of pastures to individuals and/or a group. As a result, it would allow *any* herder to enter a possessed pasture in order to obtain water.
- There is lack of clarity on what a land management plan entails. Confusion remains regarding the areas for different type of land use activities and/or whether these designations include specific prescriptions for the management of grazing etc.

Between 2005 and 2006, a preliminary assessment of the progress and outcomes of the implementation of the 2002 Land Law was carried out in seven aimags of Mongolia (out of a total of 18). It finds that:

- The implementation of the 2002 Land Law seems to be proceeding slowly in the rural areas, especially with regards to the allocation of possession licenses over pastureland. This is partly due to the fact that the reduction in the numbers of livestock and herding households due to climatic and demographic impacts has made the allocation of possession rights somewhat less urgent than it was in the mid-late 1990s.
- The pattern of allocating formal tenure to campsites only to a sub-set of households (primarily the wealthier ones) in each soum. By excluding poorer herders, it may very well accelerate the downward trajectory of the herder households that are vulnerable to poverty.

Hence, the current legislation and local attempts at implementing it may hinder efforts to solve current pasture use problems that could bring order to the steppes while ensuring sustainability of land and livelihoods.

THE ROLE OF THE MINING SECTOR IN THE MONGOLIAN ECONOMY

6.19 ***The mining sector is a major contributor to the Mongolian economy and its importance is likely to remain high in the foreseeable future.*** In 2005, the mining sector directly accounted for 18 percent of GDP, 65.5 percent of industrial output, almost 76 percent of export earnings and 20 percent of Government revenue. The economy grew at about 10.7 percent in 2004 (supported by the investment in and the initial gold production from Boroo Gold) and 6.2 percent in 2005. A significant proportion of the new GDP growth attributable to the mining sector which has somewhat offset some declines in other sectors including

agriculture. The formal mining industry sector employs over 14,500 people and the informal (artisanal) mining sector may involve more than twice this number.[8]

6.20 Mongolia's geology is complex and its mineral potential is extensive with over 6,000 mineral occurrences comprising 80 different mineral commodities currently identified. The most economically significant of these are base metals (most notably copper and zinc), gold, coal and fluorspar. The mining industry's historic output is largely based on copper and gold. Mongolia has only one copper mine (Erdenet), whose exports of copper and molybdenum concentrates earn about half of all foreign exchange and provide almost 25 percent of government revenues. Erdenet's production has progressively declined and is expected to deteriorate even further as the head-grade decreases with depth. Gold production increased substantially over the period 1995-2005 although there was a slight decrease in production between 2001 and 2003. Production from newly commissioned mines lifted gold production substantially in 2004 and 2005 to the current level of over 24 tons per annum. Until the commencement of hard rock gold production in 2003, most gold production came primarily from placer operations (shallow alluvial concentrations of gold). The placer operations are showing signs of progressive depletion of mineral reserves. Without active exploration for new placer deposits, this declining trend in placer gold production is likely to continue.

Table 6.6 Mongolian Mining Sector Contribution to GDP and Exports

	1995	2000	2001	2002	2003	2004	2005
% of GDP	12.0	11.2	11.7	10.1	12.7	17.3	18.0
% of Value of Exports	65.5	40.5	44.2	56.7	58.9	70.8	75.8

Source: MRPAM, 2007.

6.21 Based on figures provided by the Foreign Investment Agency, foreign direct investment in mineral and petroleum exploration and development activities was US$148 million in 2004 and US$191 million in 2005 of which US$40 million was for grass roots exploration activities. FDI for the sector constituted 68 percent of the total FDI for 2005. Given the rapid increase in exploration and development activities, the outlook for continued strong growth of the sector should be bright. Exploration activities have resulted in the discovery and delineation of a pipeline of potential mineral project developments that include Oyu Tolgoi (copper and gold), Tavan Tolgoi (coal), Tsagaan Suvraga (Copper and Molybdenum), Tumurtei (Iron Ore), and Ulaan (Lead and Zinc).

6.22 In addition to production constraints at Erdenet, the mining sector has experienced a volatile spike in international commodity prices. Although copper production remained steady over the period 1995 to 2005, the world copper market experienced significantly depressed prices between 1997 and 2003, and the value of Mongolia's copper exports fell as a result. Gold production also increased steadily until 2001, mostly from placer operations, also during

[8] Source: National Statistics Office, 2005

a period of depressed world prices. In 2002, gold prices started to increase followed shortly thereafter by a substantial increase in copper prices. Despite these price increases the quantity of copper and molybdenum production remained largely static or in the case of molybdenum declined. This resulted from an absence of any new copper/molybdenum mine developments or any investment in project expansions by the existing mine.

Table 6.7: Changes in Production, 1995-2005

Mining and quarrying	1995	2000	2001	2002	2003	2004	2005	% Change since 2000	% Change since 1995
Coal (mn. Tonnes)	5.0	5.0	5.1	5.3	5.6	6.8	8.3	+65%	+65%
Crude oil (thousand bbl.)					183	215.7	200.7		
Iron ore (thousand tonnes)						33.5	167.7		
Copper concentrate (thousand tonnes)	346.4	357.8	381.4	376.3	372.2	371.4	361.6	+1%	+4%
Molybdenum concentrate (tonnes)	3906	2843	3028	3384	3837	2428	2528	-11%	-36%
Gold (kg)	4504	11808	13675	12097	11119	19237	24122	104%	435%
Fluor spar concentrate (thousand tonnes)	130	210	209	159.8	198	148	134	-36%	+3%
Zinc ore (tonnes)			-	-			22,841		

Source: MRPAM, 2007.

Factors Affecting Mineral Sector Contribution to GDP

6.23 The increase in GDP due to the mineral sector can be attributed to five main factors, namely:

- *The increase in mineral commodity prices* (particularly copper and gold prices) since 2003 has boosted the value of exports despite a generally declining trend in copper, molybdenum and flourspar concentrate production. The increased commodity prices have masked the static or declining contribution of copper, molybdenum and flourspar.
- *Increased gold production* from new hard rock operations mainly at Boroo has not only replaced the declining production from placer operations but increased the total tonnage of gold production
- *Increased coal production* resulting in increased exports of coal to China and Russia. Total coal production has increased by over 3 million tonnes per annum since 2002, mainly from the development of the Narain Sukhait deposit near the Chinese border in the south Gobi. Domestic consumption of low grade coal for power generation (mostly

lignite from Bagga Nuur and Shivee Ovoo) has remained relatively flat at 5 million tonnes per annum. Meanwhile, the increase in coal production of 3 million tonnes per annum is mainly high quality hard coal.

- *Commissioning of iron ore and zinc production as well a small quantity of oil from new operations* has helped to diversify the industry away from copper and gold. While these contributions remain relatively small at present, they demonstrate Mongolia's capacity to diversify into new mineral commodities which may in future contribute more substantially to exports.

- The final contributor to increased GDP from the sector is the *dramatic increase in exploration expenditures by mineral explorers*. These contribute broadly across the economy into such sectors as the suppliers of goods and services such as laboratory services, catering, logistics, and drilling. Whilst this is not usually directly reported as mineral sector GDP growth, it can have a significant impact on a small economy such as Mongolia. Mineral exploration is an industry in its own right and with exploration expenditures totaling $127 million in 2005, equivalent to almost 10 percent of GDP.

6.24 The issue of concern relating to the recent rise in contribution of the mineral sector to GDP is that a significant proportion of the recent gains are essentially cyclical in nature. Commodity prices are high but unlikely to stay there in the medium term as new production is commissioned, and as global demand growth moderates. High levels of exploration expenditure also follow commodity price trends. As prices decline exploration expenditures are also likely to decline. As a result, a downward trend in contribution to GDP can be expected unless there are further developments of mineral deposits which add production as commodity prices fall. *Thus, an appropriately structured and stable fiscal and policy environment will be required in order to sustain the levels of exploration and development in the medium term. The lack of a stable legal environment and imposition of unpopular windfall taxes are unhelpful and likely to undermine Mongolia's competitiveness in the region.*

Mineral Exploration

6.25 There has been a rapid rise in mineral exploration in Mongolia. This is in part due to the 1997 Minerals Law, which has played a pivotal role in attracting foreign exploration companies. Other important factors were the government's abolition of a 10 percent gold tax and the widely publicized discovery of the Oyu Tolgoi copper/gold deposit in 2001. Since this discovery, the number of exploration licenses held, and the amount of land held by licensees, has increased fivefold. There are now 2,595 exploration licenses in Mongolia covering 40 million hectares, or 26 percent of its territory. The government's Office of Geology remains the largest landholder although there are moves under way to reduce the exploration title holdings of the State.

6.26 Non-governmental holdings are concentrated in a small number of companies that control a significant percentage of the remaining license areas. The largest of these companies are foreign. Exploration expenditures have rapidly increased following the rise in commodity prices from US$6 million in 2000 to US$18 million in 2002 to US$98 million in 2004 and US$127 million in 2005. This dramatic increase in expenditure was the largest percentage increase in the world over this period with Mongolia accounting for 4 percent of global

exploration expenditures and 50 percent of expenditures within the Asia Pacific region. The increase in exploration activity has led to a number of discoveries which could potentially lead to new developments given the right investment regime. These discoveries are in a diverse range of commodities including iron ore, copper, lead-zinc, uranium and coal which could strengthen the diversification of the industry away from its current focus on copper, gold and coal.

6.27 Mongolia has a number of small mines either newly in production or under development consideration. Small hard rock gold operations at Borro, Bumbat and Olon Ovoot and the Tsairt zinc mine at Tumurtiin are either in operation or nearing operations. Due to the small scale of most of these new mines they are not expected to have a significant impact on the value of production or GDP in the short term but are important to the sector and the economy for the long term. Larger scale economic impacts can be expected from the development of the large Oyu Tolgoi copper-gold deposit and Tavan Tolgoi coal deposit in the south of the country. These two operations have the potential to treble or even quadruple the current volume and value of mineral exports.

Artisanal Mining

6.28 Artisanal mining in Mongolia is not a longstanding traditional activity but primarily a response to the adverse effects of economic restructuring, which has resulted in job losses, inflation, and declining real incomes. Some people have been forced to find their own solutions to these problems, most often outside the formal economy. Artisanal mining is a viable solution for many because it is a highly labor intensive, technologically simple, and low-cost activity. The growth of artisanal mining and its sales on the informal market have become important to Mongolia in both economic and political terms.

6.29 Much artisanal mining has emerged in areas adjacent to and within the gold-bearing tailings discarded by commercial placer mines. The surge in commercial development of Mongolia's extensive placer deposits in the early 1990s left large amounts of waste material that provided a relatively rich and readily accessible resource base for artisanal miners that can be tapped with simple, affordable tools.

6.30 Artisanal gold mining started as a seasonal activity involving hundreds of people. Over the past ten years it has escalated into a year-round livelihood involving an estimated 30,000 people. During summer this number has been estimated to increase up to 100,000 people.[9] This activity poses a significant development challenge for Mongolia. While it has provided significant economic opportunities for poor Mongolians during difficult economic times, commercial miners and local government authorities have been critical, asserting that it is outside the legal and regulatory framework, degrades the environment and exposes miners to hazardous work conditions and toxic chemicals.

6.31 Because artisanal miners in Mongolia have few rights and no claim to land or minerals, conflicts have emerged between informal miners and licensed commercial mining operations, usually when there has been direct competition for access to mineral resources.

[9] *Source: MRPAM.*

Many companies have relied on security forces to defend their interests. Conflicts between local authorities and informal miners have to date been minor, although local authorities have also used police to evict miners. The informal miners have not resisted eviction and harassment but are upset and have been pushing for legislative recognition to regularize and legalize their activities. In 2001 the government attempted to accommodate artisanal mining by enacting an interim regulation of this informal activity. That regulation proved ineffective and unworkable; it lapsed after one year and was not renewed. The government is now in the process of drafting a legal framework for artisanal mining—a commendable step that is in the right direction. The next challenge in this regard will be to implement that new law.

MINERAL TAXATION REGIME

6.32 To accomplish the effective conversion of its mineral endowment by the private sector, Mongolia should ensure that the government realizes a fair and equitable share of the value added from the exploitation of its mineral resources after providing for:

- the accelerated recovery of large lumpy investments to reduce risk and facilitate debt financing;
- the mitigation of environmental and social impacts of mining to address all externalities; and
- an attractive risk adjusted return to investors to encourage the huge investments required to locate, evaluate and exploit Mongolia's hidden treasures.

6.33 Mining is a global business and international mining companies have infinite choice in the countries in which to invest. Generally, nations with political stability, good and transparent governance arrangements and an enabling investment climate have better prospects for long-term mineral sector development than those where these factors are absent. In analysing investment conditions a firm will typically analyze a host of key criteria, especially those relating to the fiscal environment. The types of criteria used and their respective importance, of course varies greatly between firms.

6.34 Several surveys have been undertaken of foreign direct exploration and mining investment decision-making, the most comprehensive of which was undertaken by the United Nations in 1992.[10] This included a comprehensive list of over 60 that international mining companies routinely take into account in their investment decisions, which include in order of importance the country's geological prospectivity, a measure of profitability, security of tenure of mineral rights, the right to repatriate profits and the long-term stability of mining policies.

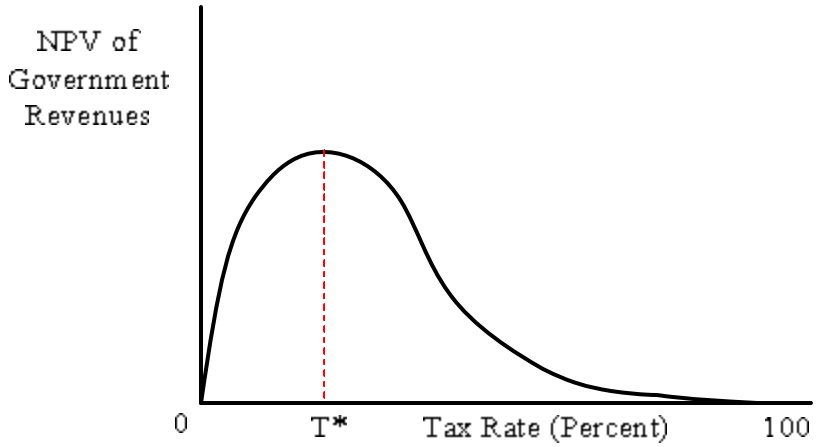
6.35 Among the top 10 factors, all but one, geological prospectivity, are related to, of affected by the regulatory framework, and of the top 20 factors, four relate directly to taxation and include:

[10] James Otto; "A Global Survey of Mineral Company Investment Preferences", Mineral Investment Conditions in Selected Countries of the Asia-Pacific Region, United Nations ST/ESCAP/1197, New York, 1992, pp.330-342

- measure of profitability,
- ability to predetermine tax liability,
- stability of fiscal regime, and
- method and level of tax levies.

6.36 None of these four tax factors need pose a barrier to investment in the mineral sector if Mongolia seriously wishes to create and sustain the interest of international investors to locate and develop the country's mineral deposits. To accomplish this, the country needs to *reestablish* a track record of legal, regulatory and fiscal stability; a fair fiscal take, or effective tax rate (ETR), commensurate with competing jurisdictions and international benchmark; and the adoption of a model investment agreement to ensure consistency among investors.

Figure 6.3: The Optimal Effective Tax Rate[11]



NPV – net present value (the amount of all taxes and fees paid by mines to the government as adjusted for the time value of money)

Source: Mining Royalties: A Global Study of their Impact on Investors, Government and Civil Society, World Bank Press, 2006.

6.37 An important part of mineral sector fiscal policy is for the authorities to clearly articulate the government's primary tax objective and to decide between maximizing its fiscal receipts in the short-run and optimizing the present-value of its share over the medium term, or some combination of the two. For short term gains, the tax regime induces one to impose a high effective tax rate (ETR).[12] However, if the ETR is too high, individual mines will pay more, but in the longer term exploration will be discouraged and there may be fewer mines willing to so business in the country. This, in turn, will narrow the tax base in this sector and, hence, tend to lower the contribution of mining revenues to the state treasury. If the ETR is too low, the returns on investment will exceed those necessary to induce the investment in the first place and the government will needlessly forego fiscal revenues. A good policy,

[11] The "Laffer curve" illustrates the notion that government can maximize tax revenues by setting tax rates at an optimum point. Although widely known among economists for some time, this curve was popularized by Arther Laffer in the mid-1970s to demonstrate the benefits of reducing tax rates (such as those on capital gains, among others) whenever it appeared they exceeded this "optimum" level.

[12] The combined rate that takes into account the present value of all taxes, duties and user fees paid by a mine over its life as a proportion of the net-present-value of its projected cash flow.

therefore, will strive to strike an optimal balance where the effective tax rate is set at T* in Figure 6.3. For most nations, this optimal ETR is usually between 40 and 50 percent.

6.38 Mongolia's mining tax system includes corporate taxes, personal income taxes, mineral royalties, value-added taxes, customs and excise duties, social insurance, and stability arrangements. The previous *Minerals Law*, which was introduced in 1997, required the Ministry of Finance to implement regulations to govern the income of mining enterprises. At that time the Minerals Law included provisions relating to the amortization of exploration and development expenditures, depreciation of fixed assets, a three-year loss carry forward provision, and rules relating to the deduction of infrastructure costs. These regulations were never implemented and were subsequently dropped or modified in the Law's most recent amendment in 2006. However, the Mineral Law still contains a number of tax provisions that apparently conflict with the Corporate Income Tax Act that should be removed since the General Law on Taxation provides that all taxes be regulated solely by the tax laws administered by the Ministry of Finance.

6.39 Recent amendments (2006) to the income tax law reduced the income tax rate to 25 percent and abolished the ten-year tax holiday bring the fiscal regime for mining to within international bench marks. The removal of the tax holiday is positive as it will remove the tendency to high grade short lived mines. It will also assist in reducing public calls for higher taxes to be applied on the industry, as in the case of earlier mine development in Mongolia, when there appears to be little benefit flowing to the general population from profitable operations currently benefiting from the tax holiday provisions. The removal of the tax holiday, absent the introduction of more appropriate capital recovery and loss carry forward provisions, has increased the level of investment risk experienced by investors due to the very high levels of capital cost involved in most mining developments. To address this serious omission, the Government is encouraged to consider the introduction of accelerated depreciation and longer loss carried forward provisions for the mining sector in order to reduce project risk as a substitute for the tax holiday.

6.40 ***Royalty rates*** for mineral products have recently been increased to levels which are uncommonly high by international standards. *Ad valorem* royalty rates for gold and copper in most producing nations lie in the range 2-3 percent. Rates of 5 percent now apply to copper, gold and other base metals from hard rock operations. (Annex Table 1 at the end of this chapter provides information on the prevailing mining royalty rates in selected developing countries in Africa, East Asia and Latin America.). While high by international standards, this is to some extent offset by the reduction in the corporate tax rate to 25 percent.

6.41 ***A windfall profits tax*** of 68 percent, based on *un-indexed* commodity price thresholds, is also now in place in Mongolia, which applies very high levels of tax during periods subjected to cyclical high commodity price spikes.

Table 6.8: Mongolia's Mineral Taxation Regime in Transition, 2002-2006

	2002	2003-2005	2006
Corporate Income Tax	15-40%	15-40%	13-30%
	Provides a tax holiday for the first 5 years of operations, followed by the second 5 years at half the tax rate. Beyond year 10 taxes will be paid at the full rate of 30% taxable income.		
Withholding tax	20%	20%	20%
Customs Duty	5%	Exempted a specific list of construction items including mining	
VAT		Exempted	0%
Royalty	2.5%	2.5%	5.0%
Export tax on minerals (gold, copper etc.)	10%	0	0

Source: Ministry of Finance, 2006.

6.42 A new provision of the Mineral Law introduced in 2006 entitles the holders of mining licenses to enter into investment agreements with the government that can stabilize tax rates for defined periods of time. These "***Investment Agreements***", formerly known as "Stability Agreements", establish in law that mineral projects involving an investment of US$50-100 million will be eligible for fiscal stabilization for a period of 10 years; US$100-300 million projects for 15 years, and projects investing more than US$300 million will have 30 year investment agreements.

6.43 The investment agreements not only stabilize tax rates, but can also confirm a licensee's right to export and sell its products in international markets, guarantee that licensees may receive and dispose of hard currency derived from sales. Three mining companies have entered into stability agreements under the old law and several are awaiting them under the new arrangements in order to commence development, including Oyu Tolgoi.

6.44 ***Value-added Tax***. The purchase of imported goods was until 2006 subject to a 15 percent VAT. This has since been reduced, which from the beginning of 2007 will be at 10 percent. In addition, a number of exemptions have been eliminated. Among these, the exemption for technological equipment and heavy machinery imported by foreign firms for use in priority sectors and export-oriented industries was removed (However, this exemption is retained in the Customs Law). The recent VAT reforms now treat the mining sector at par with other importers and will be able to benefit from potential VAT refunds against payments of taxes due to the state or local budgets, as long as they are refunded by the authorities in a timely manner.

6.45 ***State Equity Participation***. With few exceptions, mainly in West Africa region where mining investment is comparatively low, most nations do not require an equity participation in new mines. A state equity requirement or option is viewed negatively by most investors as this reduces the financial viability of a mineral deposit, amplifies risk and potentially complicates the management structure. State equity participation was in the past based primarily on the desire to maintain in the public interest greater control over its mineral

endowment and to secure greater financial benefits. However, with improvements in mining, tax and environmental laws, and with a greater understanding of the risks involved, most countries have abandoned this approach in favor of: i) exerting the desired level of control through the implementation of appropriate laws and regulations; ii) participating more directly through fiscal proxies such as income taxes and dividend withholding taxes; and iii) avoiding the diversion of State funds form more pressing public priorities. Improvements in modern mining tax systems have prompted governments to focus more on *risk-free fiscal measures rather than on risky equity* investments as the primary means of securing financial benefits from the private development of its natural capital.

6.46 The Government should exercise caution in taking anything other than a nominal equity position in new mining ventures in response to public sentiment. In the event that this is unavoidable, there are many approaches to government equity, but three dominated primary forms have emerged over the past two decades. These include paid (working) interest; free equity (government does not contribute to costs); and, more rarely, a carried interest (government pays its share of costs but these are initially paid by the investor who is repaid from the government's dividend share or forgone taxes). Government free equity requirements are very rare today. If a government takes an equity stake and pays for it through a working interest, the opportunity cost can be substantial. Returns on State revenues, which are diverted from other possible uses and invested in the mine, are entirely dependent on the operational success of a mine over which it has little control.

6.47 In assessing alternative fiscal regimes for the mining sector, it is the effective tax rate of the entire fiscal package (that looks at the combined effects of income taxes, the windfall tax, import taxes, contractors withholding taxes, royalty rates, VAT refunds and other tax exemptions (if, any) that matters. (See Table 6.9 for examples of Royalty rates in selected countries.) A recent comparative analysis of 20 competing jurisdictions[13] indicates that with an estimated ETR in excess of 68 percent for a representative large scale copper mine, Mongolia imposes a high tax burden by international standards and ranks in the top quartile of the countries studied. The development of appropriate fiscal model/s and conductive scenario analyses using alternative fiscal and commodity price assumptions to restore Mongolia's competitiveness should be undertaken in this regard as a matter of some urgency.[14]

[13] Otter, James (2007), Competitive Position of Mongolia's Mineral Sector Fiscal System

[14] See Otto, et. Al (2006) and Lederman & Maloney (2006) for international comparisons of taxation and royalty regimes in the mining sector.

Table 6.9: Mining Royalty Regimes in Selected Developing Countries in Africa, Asia and Latin America

	Botswana	*Ghana*	*Mozambique*	*Namibia*	*South Africa*	*Tanzania*	*Zambia*	*Zimbabwe*
Format	National law	National law and negotiated agreement acts	National law	National law	Guidelines	National law	National law	None
Royalty type (nonindustrial minerals)	Ad valorem (NSR)	Ad valorem (sales revenue)	Ad valorem (sales revenue)	Ad valorem (sales revenue)[a]	Variable	Ad valorem (NSR)	Ad valorem (NSR)	n.a.
Royalty rate	3–10%	3–12%	3–12%	5–10%	Variable[b]	0–5%	2%	0%[c]
Variation: Minerals	Yes Precious stones: 10%; precious metals: 5%; other minerals or mineral products: 3%	No Same royalty system for all minerals	Yes 10–12% for diamonds; 3–8% for all other minerals; rate established through negotiation	Yes Uncut precious stones: 10% of market value; dimension stone: 5% of market value; other minerals: max. 5% of market value	Yes Sliding-scale formula for gold; other minerals variable % of either market value or net profit	Yes Diamonds: 5%; cut and polished gemstones: 0%; building materials: 0%; all other minerals: 3%	No Same royalty system for all minerals	n.a.
Copper	3% ad valorem on adjusted gross market value	3–12% ad valorem, graduated on operating ratio	Negotiable within 3–8% ad valorem, on market value	5% ad valorem, on market value	Negotiated within guidelines	3% ad valorem on free on board (FOB) or NSR	2% ad valorem on net back value (NSR)	No royalty, but sometimes applicable in special cases

Table 6.9 continues on next page.

	Botswana	*Ghana*	*Mozambique*	*Namibia*	*South Africa*	*Tanzania*	*Zambia*	*Zimbabwe*
Gold	5% ad valorem on adjusted gross market value	3–12% ad valorem, graduated on operating ratio (3–4% fixed in recent agreements)	Negotiable within 3–8% ad valorem, on market value	5% ad valorem, on market value	Negotiated within guidelines	3% ad valorem on FOB or NSR	2% ad valorem on net back value (NSR)	No royalty, but sometimes applicable in special cases
Limestone	3% ad valorem on adjusted gross market value	3–12% graduated on operating ratio	Negotiable within 3–8% ad valorem, on market value	5% ad valorem, on market value	Negotiated within guidelines	0%	2% ad valorem on net back value	None
Coal	5% ad valorem on adjusted gross market value	3–12% graduated on operating ratio	Negotiable within 3–8% ad valorem, on market value	Up to 5% ad valorem, on market value	Negotiated within guidelines	3% ad valorem on net back value	2% ad valorem on net back value	None
Variation: Mine size	No	No	Yes ASM exempt	No	Yes[d]	No	Yes[d]	n.a.
Deferment /Reduction	Yes[e]	Yes	No	Yes[c]	No	Yes	Yes	n.a.

Table 6.9 continues on next page

	China	India	Indonesia (7th generation COW)	Mongolia	Myanmar	Papua New Guinea	Philippines
Format	National law	National law	Model agreement	National law	National law	National law	National law
Royalty type (most non-construction minerals)	Two types: 1. Royalty: unit based plus 2. Mineral resources compensation fee: ad valorem based	Ad valorem or unit based	Unit based	Ad valorem	Ad valorem	Ad valorem	Ad valorem
Ad valorem rate range	1: Various ranges for each mineral, expressed in yuan/tonne ore, plus 2: 1–4% depending on mineral	0.4–20.0%	n.a.	2.5%, except placer gold at 7.5%	1.0–7.5%	2.0%	2.0%
Variation: Minerals	Yes, 1: Ranges of unit charges for each mineral, plus 2: ad valorem rate for each mineral	Yes, Ad valorem rate or unit-based charge for each mineral	Yes, Unit-based rate for each mineral	No, Except gold	Yes, Gemstones: 5.0–7.5%; precious metals: 4–5%; industrial minerals: 1–3%; other minerals: 3–4%	No	No, Except coal

Table 6.9 continues on next page

	China	India	Indonesia (7th generation COW)	Mongolia	Myanmar	Papua New Guinea	Philippines
Copper	2% ad valorem plus 0.4–30.0 yuan/tonne ore	3.2% ad valorem metal of London Metals Exchange value of copper in ore	< 80,000 tonnes, US$45.00 per tonne; (80,000 tonne, US$ 55.00 per tonne	2.5% ad valorem on sales value	3 to 4% ad valorem, international reference price	2% NSR	2% ad valorem on market value
Gold	4% ad valorem plus 0.4 to 30 yuan/tonne ore						
	1.5% ad valorem; London Bullion Market Association price of gold in ore	< 2,000 kg, US$225/kg; >2,000/kg, US$235/kg	If from placer 7.5% ad valorem; otherwise 2.5% on sales value	4–5% ad valorem, international reference price	2% realized FOB	2% ad valorem on market value	
Limestone	2% ad valorem plus 0.5–20.0 yuan/tonne or yuan/m^3 ore	55 rupees/ tonne	< 500,000 tonnes: US$0.14/tonne; (500,000 tonnes: US$0.16/tonne	2.5% ad valorem on sales value	1–3% ad valorem, international reference price	2%	2% ad valorem on market value
Coal	1% ad valorem plus 0.3–5.0 yuan/tonne	65 to 250 rupees/tonne	13.5% FOB or of sales revenue	2.5% ad valorem on sales value	—	2%	10 pesos/ tonne
Variation: Mine size	Yes, Unit-based royalties set mine-by-mine	No	Yes, Different rates for miners with COWs than miners with mining law licenses	No	No	No	Yes, Special treatment of small-scale operations
Deferment /Reduction	Yes	No	No (under most COWs)	No	Yes	No	No

Table 6.9 continues on next page

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Dominican Republic*	*Mexico*	*Peru*	*Venezuela, R. B. de*
Format	Provincial law	National law	National law	None	National law	None	National law	National law
Royalty type (nonindustrial minerals)	Most provinces: no royalty; others: ad valorem	Ad valorem, sliding scale based on ratio	Ad valorem	n.a.	Ad valorem, creditable against income tax	n.a.	Ad valorem, sliding scale based on annual cumulative sales	Ad valorem
Royalty rate	0–3%	1–6% based on sales price position relative to reference price bands	0.2–3.0%	n.a.	5% of FOB export	n.a.	0–3% (exported mineral 1–3%; if no international price 1%; small scale 0%)	3–4%
Variation: Minerals	No	Yes	Yes, 1: Aluminum ore, manganese, salt, phosphorus: 3%; 2: iron, fertilizer, coal, and remaining minerals: 2% (except for 3); 3: precious stones, diamonds, and noble metals: 0.2%; 4: gold: 1%	n.a.	No, Unless there is a negotiated agreement or minerals are not exported	n.a.	No	Yes, Gold, silver, platinum and its associated metals: 3%; diamonds and precious jewels: 4%; other minerals: 3%
Copper	Catamarca: 3% ad valorem on sales value less allowable deductions	1–5% ad valorem: reference bands not known	2% ad valorem on sales value less commercial taxes, transportation, and insurance	None	5% ad valorem, FOB export	None	Up to US$60 million 1%; from US$60 to US$120 million 2%; over US$120 million 3% on gross value	3% of commercial value

Source: James Otto, et. al (2006). Mining Royalties: A Global Study of their Impact on Investors, Government and Civil Society. Directions in Development, World Bank. Tables 3.4-5, and 3.7.

REFORMING THE LEGAL AND REGULATORY FRAMEWORK FOR MINING

6.48 In the past decade up to early 2006 the role of the government has evolved from being predominantly the owner/operator of mines to being a manager/regulator of the sector. During the past 5 years, the Mongolian mineral sector has received significant foreign direct investment attention and corresponding national private sector expansion. The sector has established a prominent international profile as a result of its reform initiatives, geological prospectivity, and media exposure of its potential world-class copper and gold deposits in the south Gobi area. The stability of the overall legal/regulatory framework has been an important component in sustaining the private sector expansion to date.

6.49 To many the 1997 minerals law represented international best practice and was designed to accommodate government's existing institutional capacity by providing a simple but robust framework supported by a large number of appropriate regulations. Clarifying regulations have not yet been developed for many licensees' obligations, including the environmental and social obligations of the license holder. Consequently the implementation of the law came under increasing pressure in regulating a growing sector and was finally discredited.

6.50 Recent amendments to the legislation in the form of a new Mineral Law were passed in mid 2006 and in some respects have taken a step backward particularly in relation to Government intervention in mining equity arrangements. The introduction of a classification of Strategic Mineral Deposits in which the Government can compulsorily acquire equity in operations. This creates significant uncertainty, increases the risks to both the state and the investor and is likely to be viewed negatively by potential investors. Two classes of equity acquisition options have been defined. The first allows the Government to acquire up to a 50 percent interest in operations where "Proven Reserves" have been identified by State Funded Exploration. The second allows the Government to acquire up to 3 percent of any other operation if deemed to be of strategic importance to the Government. In this case the term strategic is defined as any deposit *"where it is possible to maintain production that has a potential impact on national security, economic and social development of the country at national and regional levels or deposits which are producing or have the potential of producing above 5 percent of Gross Domestic Product of the year"*. Given the small size of the Mongolian economy and minimal economic activity in most provinces any medium scale mining project will have an impact on the regional economy and thus be subject to equity participation under the above definition.

6.51 The involvement of the State in direct equity participation results in the State taking considerable commercial investment risk in a volatile industry. For a newly developing economy with many priorities and varied calls on the State Treasury for investment in infrastructure and services, it is difficult to see why the State should be increasing its exposure to such risk. The size of capital investments required to commission a large scale mine would require the Government to raise considerable debt or forgo substantial fiscal receipts in order to meet capital calls for mine development. This could result in the Government reaching country lending limits for most major

institutions and result in the government being constrained in future borrowing for essential infrastructure. In effect the government would be sacrificing investment in infrastructure and services in order to service debt on a risky commercial investment.

6.52 It must also be recognized that the return on investment to a private investor in such a mining venture is higher than the return to Government from an investment in the same operation. This is due to the tax leverage or tax shield that private companies enjoy with respect to interest payments. A private company deducts interest payments for the calculation of taxation whereas the State has no such capability to offset interest costs and thus bears the full cost of financing.

6.53 Perhaps the most compelling argument against State equity participation is that it can compromise its role as a regulator of the sector. This has occurred in other countries where the companies were permitted to operate with lower environmental and social standards because the Treasury (as shareholder) interfered with the decision-making process of the Ministry of Environment because the Treasury could not afford to pay for the necessary environmental and social safeguards. In addition to direct State equity participation, the new amendments to the legislation require each new mining venture to be owned by a unique legal entity which shall sell 10 percent of the shares of the entity on the Mongolian Stock Exchange which may not have the liquidity to absorb the size of investments envisaged in the short to medium-term.

6.54 These provisions will require the formulation of a substantial body of implementing regulations in order to clarify the clauses in the Law. These include the requirement to define what constitutes "proven reserves" and the criteria to be used to establish reserves; clarify what the Government's rights are with respect to a deposit which may have only a small proportion of the proven reserves identified by State funded exploration and the balance proven by private sector exploration; and what equity stake the government will take and how this is to valued and be financed.

6.55 In 2002 the government issued policy guidelines outlining mineral development and sector promotional goals for 2002–10 and committed itself to improving mining sector performance. A key element in these guidelines was a commitment to reinforce the favorable legal environment for private mineral exploration activities. The guidelines also recognized the importance of the transition away from state ownership and control and focused on a market-driven, private-sector-oriented industry that is regulated by the government. However, the government has chosen not to privatize and relinquish control of the two largest mining companies, *Erdenet* and *Mongolrostsvetment*, because of their importance to the economy. These guidelines now appear to have been reversed by these latest policy shifts and the directive to set up a state owned entity within SPC to hold and manage the State's investments in the mining sector.

Projected Medium-term Impact of the Mining Sector on the Economy

6.56 International investors in mineral exploration in Mongolia are focusing attention on identifying and exploiting hard-rock deposits and large, high quality coal deposits, and the future growth potential of the mining sector lies in such deposits. There is also an

ongoing assessment of significant exploration prospects, which could lead to substantial increases in output in the medium to long term. These prospects include Oyu Tolgoi (copper/gold), Tavan Tolgoi (Coal), Gatsuurt (gold), and Golden Hills (gold).

6.57 The mining sector output has the potential to increase substantially over the next decade. It is projected to double or even threefold from 2003 levels by 2010 provided large projects get development approvals and are successfully commissioned. The mining sector is poised to make a robust economic contribution and support the government's average annual GDP forecast of between 6 percent and 10 percent annually till at least 2010.

6.58 Between 2006 and 2010 copper exports are projected to almost threefold (provided Oyu Tolgoi is developed) with the contribution of copper to GDP potentially increasing to over 25 percent of GDP. The share of copper in total exports is projected to increase from 27 percent to 45 percent over the same period. These significant increases in export revenue would support a return to current account surpluses. The current high gains in the value of copper exports are not expected to continue in the longer term as the increases to date are based purely on increased commodity prices and are not a result of production increases.

6.59 On the fiscal side, total contribution of copper to overall revenue will also grow but with a time lag as it is likely to take several years to amortize the capital invested in such a large operation as Oyu Tolgoi and have corporate taxes become payable. The recent removal of tax holidays by the government will go some way to bringing forward in time tax payments from newly developed operations.

Key Factors Affecting Future Performance of the Mining Sector

6.60 Mining activities can provide considerable revenue for the government through taxes and royalties. Most mines in Mongolia are likely to be small to medium in size and geographically diverse although both the Oyu Tolgoi and Tavan Tolgoi mines have the potential to become world class projects. Mining operations could very well create significant domestic demand for suppliers of good and services. In addition, the large informal mining sector and related services could transform themselves into viable SMEs. With the potential growth in mining over the next ten years, there is a significant potential to develop SMEs to provide basic goods and services related to mining expansion.

6.61 The acquisition of land is often a prerequisite for increasing mining production. For local populations making a living from traditional agriculture, monetary compensation is often not a viable solution. The most advanced compensation agreements being used globally for displaced landowners or occupiers combine mine employment with the creation of spin-off businesses relating to mining activities, and some training/capacity-building. Such an approach effectively compensates landowners by helping them acquire the capabilities to use financial resources as alternative assets to land. Such practices are not yet prevalent in Mongolia.

6.62 Globally, mining companies have also responded to the need to support social programs that benefit the surrounding communities by developing independent foundations that are capable of leveraging funds for community development and social programs from other sources such as private donors and public funds.

Establishing Adequate Infrastructure to Meet Mining Sector Growth

6.63 A mining prospect's proximity to road, railway, and power infrastructure has a major impact on the capital costs of development. Geological prospects that would normally be viable become uneconomic if the costs of providing the necessary infrastructure are too high. Mongolia needs to give serious consideration on how best to develop infrastructure over the next ten years, as the location of new roads, railways and power plants will have major impact on mining development. Almost all medium and large mine developments likely to occur in Mongolia will require significant new power, water, and transportation infrastructure.

6.64 Mongolia's largest prospect, *Oyu Tolgoi,* is located in one of the most remote parts of the country and has no water, power, or transportation within more than 300 kms. While it is possible to find water through drilling in the vicinity, a road and/or railway needs to be built to the site to connect with China, which would be both a major market and source of inputs and supplies for the project. It will also be necessary build a power plant or provide high-voltage transmission lines from either the Mongolian or Chinese national grid. The prospect's operators are examining the possibility of building a railway line from China to the deposit site financed by a range of possible options including using state funding. However, it is likely that the cost of providing the necessary infrastructure will dramatically increase the capital cost of developing this prospect and may end up delaying its commissioning. The Tsairt zinc mine also is far from a railway line and is trucking concentrate to market at substantial cost. The Government should conduct a cost-benefit analysis of supporting infrastructure for each major mine development to determine if the mine provides a sufficient catalyst to justify the State's entry into new infrastructure projects in support of regional development.

Potential Institutional and Policy Constraints to Mining Development

6.65 Foreign investors will be the key driving force in locating and developing mining in the medium to long term and a survey of perceptions of the largest mining sector investors was carried out in 2003. The survey was based on a questionnaire asking their overall views of the current investment climate, constraints to development, and problems. The questionnaire also asked for recommendations on how to improve the investment climate for mining.

6.66 The survey indicates that investors generally viewed Mongolia as a favorable location for mining investment. Most respondents had a high regard for Mongolia's mineral potential and felt the government was responsive and reasonably investor friendly. The Mineral Resources and Petroleum Authority of Mongolia (MRPAM) had a high rating and compared favorably with similar organizations in Asia. Investors found the mining and exploration licensing system in Mongolia reasonably effective. Most of

the respondents considered the Minerals Law internationally competitive. These views, however, are likely to be tempered by adverse changes to the Mining Law, more direct government participation in mining, and the introduction of excess profits tax and proposed export duties.

6.67 While most investors found the overall legal and regulatory framework favorable, they were concerned about the stability of the system and government corruption, particularly at the local level. Investors have also claimed that implementation of the laws is less than satisfactory, and expressed serious concerns over the government's intentions and repeated attempts to amend laws without stakeholder consultations. While the respondents generally considered reporting requirements for mining and exploration activities reasonable, most felt unsure about confidentiality when reporting to the government. Investors would like to see an improvement in the collection and dissemination of geological data and believed the government could be more effective in promoting Mongolia's mineral potential internationally.

6.68 Respondents found levels of taxation not competitive compared to other countries in Asia. They considered Mongolia's tax legislation complex and difficult to comprehend. In addition, all respondents felt the Mongolian authorities did not understand international best practices in mining taxation, and that the implementation of legislation often appeared to contradict other laws. Consequently stability or investment agreements were widely regarded as very important in doing business in Mongolia.

6.69 Investors also identified weaknesses in environmental and social management within the Government. It will also be important to ensure that improvements in environmental law and enforcement are implemented. This aspect is addressed later in this chapter.

6.70 Investors pointed to a number of specific areas in the business environment that they would like the government to address. These included the drafting and implementation of enabling regulations to clarify licensing and other procedures in the law. They were also concerned about the Office of Geology's direct holding of exploration licenses and a lack of consistency in the implementation of legislation, particularly taxation regulations, and also a lack of transparency within the MRPAM Cadastre Office. The Government has recently taken steps to improve the operation of the Mining Cadastre Office with assistance from the donor community. The new Mineral Law of 2006 similarly requires the completion of regulations in order to clarify definitions and give specify the details of regulatory processes.

6.71 There has been growing public pressure on the Government to strengthen environmental safeguards, increase the tax take and government control on the mining sector which came to a head in early 2006 with demonstrations on the streets of Ulaanbaatar. This in part resulted from poor rehabilitation of existing alluvial gold workings and the absence of any taxes being paid by profitable new mining ventures due to their tax holidays. This domestic public pressure has been the driving force behind recent political moves to change the Mineral Law, mining fiscal provisions, and equity participation by the State. This is yet another example why tax holidays are not good

public policy as they often create animosity and a public perception that the industry is not paying its way.

6.72 Since this survey of mining sector investors was carried out, royalty rates have increased, the tax holiday has been abolished, a windfall profits tax has been introduced and new State equity participation provisions have been passed (all in 2006). These new provisions will all have negatively impacted on investor perceptions of Mongolia. Already this appears to be negatively affecting the level of investment in new exploration and is also reflected in a significant drop in gold sales to the Central Bank since the new measures were introduced.

KEY ISSUES IN MANAGING THE MINING SECTOR IMPACT ON THE NATIONAL ECONOMY

6.73 Mongolia's mining sector has the potential to contribute significantly to economic growth but its development will to a large extent depend on the government's ability to establish and maintain a competitive and stable fiscal regime for mining, manage its mineral wealth, and ensure sound governance for the sector. Inherent in the optimal conversion of Mongolia's natural capital the need for government to deploy its receipts from mining in productive investments including infrastructure and human capital that survive way beyond the life of the mine and contribute to a net gin in national wealth. Experience from Latin American countries suggests that natural resources are neither a curse nor something destined to result in sub optimal growth. Empirical and historical evidence in Latin America suggests that "resources do spur economic development when combined with accumulation of knowledge for economic innovation".[15]

6.74 Cross-country evidence from countries that depended on mining for growth suggests that a government should try to address the challenges associated with the structure of its production and diversification of the economy while at the same time prevent the development of unsustainable fiscal policy and mounting debt; avoid rent-seeking behavior in weak institutional settings, and overcome absorptive capacity constraints and adverse impacts on non-mineral exports. *What* countries produce and export and *how* firms and workers produce any particular type of good will all be determined by the accumulation of knowledge, level of infrastructure, and the equality of governance in the economy. On infrastructure, the quality of public infrastructure will influence the cost of doing business, in turn, the provision of private infrastructure (i.e. each type of public expenditure will have externalities and each type of spending has gestation lags before their benefits can be reaped.) The effect of natural resources on the pace of growth crucially depends on the availability of human capital.

6.75 Economic literature also suggest that a significant increase in mineral production might also have an impact on growth by adversely affecting the competitiveness of the non-minerals export industry, notably manufacturing (the so-called "Dutch Disease" or "Resource Curse" effect. See also Chapter 7 of this report). This can to some extent be managed by ensuring that the currency value does not appreciate to levels where the competitiveness of agricultural and manufacturing are adversely affected.

[15] Source: Lederman, Daniel, and William Maloney (2007), World Bank.

Box 6:3: Australia and the United States: Mineral Rich but with Different Outcomes

Australia was a leading gold-mining country in the 19th-century, but it also has abundant resources of coal, iron ore, and bauxite, among others and a strong mining sector and a cultural heritage similar to that of the United States of America (U.S.A.). Yet, mining activities did not take-off in Australia relative to the western USA (namely, Arizona, Montana, and Utah) even though they both had small populations relative to their land area, harsh climates of the large desert areas and forces motivating migration out of these remote areas to other parts of the country.

Australia lagged well behind other developed countries in engineers per capita and was heavily dependent on foreign science. In the 1880s, foreigners who managed the mines had a lot of practical experience but were untrained in metallurgy and resistant to new technology. Relative to the USA, the technology used lacked economies of scale and protectionist policies inhibited inflows of knowledge embodied in goods and services. As a result the pace of learning in the Australian mining sector decreased considerably. Pessimism led to misguided mining sector policies and lack of exploration effort. In 1938, the Australian government imposed an embargo on all iron ore shipments with a view to conserve the remaining supply and effectively raised the barrier to exploration further which remained in place for the next 25 years. In 1960, this policy regime was changed and new exploration activities began. By 1967, proven reserves of high-grade iron were more than 40 times the level of 10 years earlier. New discoveries of previously unknown deposits of copper, nickel, bauxite, uranium, phosphate rock and petroleum were found.

Meanwhile, the American minerals economy had developed significantly through: (a) an accommodating legal environment; (b) investment in infrastructure of public knowledge; and (c) education in mining, minerals and metallurgy. In fact, resource extraction in the USA was more fundamentally associated with ongoing processes of learning, investment, technological progress, cost reduction, and generating expansion of the sector.

Source: Wright, Gavin and Jesse Czelusta (2007) "Resource-based Growth Past and Present. In Lederman and Maloney (2007) Chapter 7.

Environmental Impact of Mining Activities

6.76 It is not only the efficiency of the mining exploration and extraction activities that matter in the conversion of its natural capital, but the way in which these are undertaken that could lead to significant environmental damage, production losses, and a reduction in national wealth. Moreover, little has been done to systematically assess and address the costs of possible environmental damage from this dominant sector's ongoing and planned activities in Mongolia. The paucity of available data, uncertainty about the long-term impacts of mining activities and reluctance of the private sector to invest in such assessments does not help either.

6.77 Recent World Bank research in this regard suggested several environmental impacts of mining in Mongolia that need to be addressed over the long run.[16] Current practices in alluvial gold mining, the major source of gold to date in Mongolia, are inefficient and use excessive process water. This overtaxes surface waters and underground supplies, and also generates excessive effluent, which are difficult to manage and poses a threat of uncontrolled discharges of slurry. In addition, where rivers

[16] See World Bank (2006j). *Mongolia: A Review of Environmental and Social Impacts in the Mining Sector*. World Bank, Washington, D.C. May 2006.

are illegally dredged and where tailings are discharged into surface waters, turbidity of surface waters is a major concern. The water pumped from the mines is discharged into open surface areas and often cause flooding. This leads to the formation of new, transient wetlands, which generally fall dry once the mine ceases to operate. There are increased risks of water-related infectious diseases due to unsanitary conditions of thousands of artisanal miners living by the rivers and streams. The burning of dung and rubber tires in these areas to melt the permafrost also leads to toxic poisoning. Instead the waste water in these wetlands could be treated and dedicated to cleaning up seepage water from waste rock piles or from mines.

6.78 In Mongolia, most waste-rock dumps from industrial mining are unstable and prone to erosion. Rainfall washes gravel and soil down into valleys, where valuable grazing land can become polluted. In some cases, waste-rock dumps and tailings are reworked by artisanal miners under unsafe conditions and risk injury or loss of life. Air and mercury pollution is also a mounting problem, especially among the artisanal miners.[17]

POLICY RECOMMENDATIONS TO IMPROVE MINING SECTOR INVESTMENT CLIMATE

6.79 To realize mining sector growth potential the government should aim at achieving a stable legal, regulatory and fiscal framework that is transparent and internationally competitive for private sector development of the minerals industry. It needs to be responsive to the key concerns expressed by private sector investors, in particular putting in place the enabling regulations for the new Minerals Law and developing and maintaining a competitive mining sector fiscal regime (i.e. taxes, royalties, withholding taxes etc.). The government should continue to improve the application and granting of mineral licenses, regulation of mining and environmental activities, its awareness of best practices in the international mining sector and emphasize issues relating to the management of mining revenues. This is necessary to avoid the policy errors of other mineral dependent countries, and ensure that the mining sector becomes an engine of long-term growth for Mongolia. Policies should include macroeconomic policies and policies for institutional capacity building, at both the national and sub-national level. Finally, the government should carefully formulate a suitable regulatory framework to integrate this socially important activity into the current large-scale mining framework by providing for the licensing of small scale miners and their lease areas, as well as, providing a suitable occupational health and safely and environmental management framework to guide their operations.

6.80 ***Provide the enabling regulations for the otherwise acceptable overall legal framework.*** A key element in achieving planned mining sector growth will be establishing and maintaining the legislative and institutional stability that spurred

[17] Mercury was banned from gold mines in the former Soviet Union in 1982 and today is used illegally in only a few placer and hard-rock mines in Mongolia. Dust generated by placer artisanal mines—by shovelling, scraping, chiselling, bagging, and spillages in a confined space with poor ventilation—causes eye injuries, bronchial complaints, and silicosis. Even more dangerous is the smoke from fires to melt permafrost, particularly black smoke from tires, which contains carbon particles, carbon monoxide, polyaromatic hydrocarbons, benzene, phenol, and cyanide.

investment in Mongolia's mineral sector over the past few years. In the period leading up to 2006, investors were generally satisfied with the legal and regulatory framework. However, the investor survey showed that improvements are required in terms of putting in place the enabling regulations for the law. Stability, clarity and certainty would be strengthened by drafting regulations for implementing the Minerals Law.

6.81 The passing of the new Mineral Law brings with it the urgent and critical need to establish the legal basis for a regulatory framework and authority for the Cabinet to pass enabling regulations to effectively clarify and implement the law. Many issues in the law will require elaboration, as well as clarification of specific processes, such as the Cadastre Office functions for the receipt of applications, and the granting, relinquishment and cancellation of mining rights. Provisions will also be required that explain the processes relating to the tendering of mineral properties by the State. Maintaining the transparency of the Cadastre office function is critical to maintaining confidence in the licensing system. Regulations will also be required to clarify the rights and obligations of the State in taking up equity in mining projects, how these are to be valued and financed, as well as mine safety, environmental protection, operational reporting and disclosure amongst others.

6.82 ***Improve the fiscal regime to enhance investor confidence.*** The following recommendations are made based on international best practice:

- *Movement towards accelerated depreciation and loss carried forward provisions to reduce project risk*. The global trend in tax policy is away from tax holidays and this has been followed by Mongolia in the most recent fiscal reforms. The removal of the tax holiday has been offset by a reduction in income tax rates to more competitive levels, but should also be supplemented by the implementation of accelerated depreciation provisions to allow early capital recovery by investors and the ability to carry forward losses for tax purposes for at least seven years in order to reduce project risk. It also increases the capacity of the private sector to mobilize capital and expand the tax base through investing in further development of new projects in the sector.

- *Review the royalty applicable to mining in an international context*: The newly implemented rate of 5 percent is relatively high by international standards. However, it is a reasonable rate given Mongolia's low corporate income tax of 25 percent and generous capital recovery rules. In deciding whether to maintain the current 5 percent royalty rate, the Government might want to consider royalty regimes in other countries, including a sliding scale royalty based on commodity prices, which are presented in Annex 1.[18]

- *Reassess the Windfall profits tax*: The Government might want to reconsider the windfall profits tax. If it wishes to capture a larger share of the benefits during periods of high commodity prices there are more effective measures such as a

[18] For a more detailed analysis of mining royalties regimes across the globe, see "Mining Royalties: A Global Study of Their Impact on Investors, Government, and Civil Society", The World Bank (2006).

progressive royalty based on the value of contained mineral at some reference. The recent repealing of the exemption of gold sales from VAT was a step in the right direction.

- *Ensure that distributed tax revenues are effectively managed*. The new provisions relating to mining leases call for payment of fees and a proportion of the royalties directly to beneficiaries both at regional and local levels as well as to the agency responsible for Geological Surveys. It is important that local communities affected by mining operations benefit directly from such operations and that local government has the capacity to effectively utilize the money to bring improved quality of life to the communities in the mining impacted areas. It is also important that a pre determined proportion of these funds are provided under this mechanism to both the Geological Survey to develop and distribute pre-competitive geological maps and data products to stimulate private sector exploration (rather than being used by the agency to compete with the private sector to carry out high risk exploration); and also to maintain and operate an independent and efficient service to provide easy, transparent and fair access to minerals by investors.

- *Amend the law to permit all companies in the mineral sector to register for VAT purposes:* All companies operating in the exploration and development phases of the minerals industry should also be allowed to register for VAT purposes and be entitled to VAT refunds. Exemption from VAT increases the cost of exploring and mining in Mongolia, and presents a barrier to investment. Such a VAT provision is not consistent with international best practices.

- *Ensure that the new investment agreements are fair and encourage private investment:* The new Mineral Law provides for the introduction of Investment Agreements to replace the previous Stability Agreements. The government must be mindful that, based on the experience of other countries, such agreements can be counterproductive if they are not handled in a transparent and consistent manner, and in accordance with clear guidelines. It is recommended that the Government adopts a Model Investment Agreement as a draft standard agreement from which minor points can be negotiated to achieve any site specific objectives. They should also refrain from providing any commitment which is contrary to any other law including any special fiscal arrangements other than to stabilize such rates as are in general force by reference to the law at the time of the agreement. Unlike the provisions of the new Mining Law that provides for stability period of up to 30 years, the term of such agreements should be limited in duration to the greater of the financing period or ten years. This reduces issues of sovereign or political risk issues, thereby making it easier for companies to secure financing for mine development. Once the debt has been redeemed fiscal stability no longer becomes such a critical issue.

6.83 ***Maintain relevant statistical information about the taxes paid by the mining sector and sub-sectors:*** At present, statistical information concerning tax collections

from the mining sector is consolidated with other tax payers and is difficult to obtain and unreliable.

6.84 ***Improve investor confidence in the administration of the tax system:*** There are several improvements that could boost this confidence. First, this law should prescribe the tax treatment of exploration and development expenditures. These expenditures can be substantial, but the current law does not address their tax deductibility. Second, the tax treatment of mine reclamation and closure costs should be addressed in the corporate income tax law. Third, the corporate income tax law should confirm the deductibility of mineral royalties in determining taxable income.

6.85 ***Reconsider the new provisions relating to strategic mineral deposits and State equity participation.*** Government equity participation in mineral projects is an important political symbol in many developing countries, including Mongolia. The current law stipulates that the government may participate with up to 34 percent stake in a project that was not identified through state funds, and up to 50 percent stake in a project that was identified through state funds. However, the law as currently drafted does not specify the basis upon which the State will take up its equity, whether by fully funding their share of exploration and development expenditures, through a carried equity stake, or free of any costs to the State.

6.86 In the case of projects developed where there may have been State Funded Exploration the government will need to clearly specify by way of regulations how the Government will determine what percentage it will take up and how to define "Proven Reserves". Proven reserves generally means reserves identified on the basis of certain criteria and consistent with a code for reporting of ore reserves such as the Australasian Joint Ore Reserves Committee Code (JORC) for the reporting of mineral resources and ore reserves. If the State were to take up equity that was proportional to the share of reserves it "Proved" up relative to the total reserve base, then it may be somewhat more equitable and acceptable to the private sector. If, however, the right to take up to a 50 percent exists where the State may have only proved the existence of a very small tonnage relative to the total size of the whole deposit then this will be rejected by the private sector and considered by most observers as expropriation with or without compensation.

6.87 Given the various risks related to investments in mining projects, as well as the opportunity cost of such investments, the Government might want to consider a more cautious stance on equity participation in such projects, by not taking the maximum amount of equity provided for under the new Minerals Law.

6.88 **Improve the management of artisanal mining.** An institutional needs assessment across agencies at the central and local levels and adoption of legislation to accommodate the needs of artisanal miners is important and long overdue. This assessment could identify resources and capabilities for the design and implementation of policies, laws and regulations relating to artisanal mining, its licensing and occupational health and safety management as well as its social and environmental impacts. It could

then make recommendations for the adoption of a regulatory framework to ameliorate any deficiencies.

6.89 **Continue Implementation of the Extractive Industries Transparency Initiative (EITI).** The Government has publicly committed to, and is in the process of accelerating the implementation the Extractive Industries Transparency Initiative (EITI). This is a necessary and welcome development and, if properly implemented, should increase public awareness of the contribution of the mineral industry to the national economy and confidence in the Government's stewardship of its mineral resources. The Government will need to maintain an ongoing financial commitment to implementation of the initiative to collect, audit, compile and publish revenue statistics over time.

WILDLIFE AND FOREST RESOURCES

6.90 Many Mongolians are dependent on natural resources such as wildlife and forests for their livelihoods. Although their contribution to the GDP is increasing, the quality of these resources is eroding. This is a result of unsustainable overuse, a rapid growth of illegal activities in these sub-sectors that is depriving the government of a lucrative revenue base.

Illegal Wildlife Trade

6.91 Mongolia's biodiversity is facing significant threats from a host of sources, and one of the greatest threats facing many species is hunting for commercial wildlife trade.[19] Following the collapse of the USSR, this tightly controlled industry fell into disarray; wildlife became a valuable open access resource that directly feeds an increased demand for wildlife products, as well as an increase in the types and values of the species traded, both domestically and internationally. Wildlife trade is an important part of an overall strong trade growth, even if the full volume has never been documented. China, followed by Russia, Korea, and Japan are the largest trading partners for Mongolia wildlife. The most visible change in Mongolia's international wildlife trade is the increase in the number of species traded, from 24 species pre-1990 to 34 species, including many that are globally endangered.

6.92 There has been a significant increase in both the volume and the price of traded wildlife, internationally as well as domestically. The largest portion of wildlife trade, both in terms of volume and value, consists of furs sold on the international market, primarily to China, with some trade going to Russia and a limited amount sold on the domestic market.[20] The single largest volume of fur trade is for Siberian marmot, of which an estimated 3 million animals were harvested in 2004 alone, at an estimated

[19] Wingard J.R. and P. Zahler. 2006. *Silent Steppe: The Illegal Wildlife Trade Crisis in Mongolia*. Mongolia Discussion Papers, Washington D.C.: World Bank. See also Kaczensky P., D.P. Sheehy, C. Walzer, D.E. Johnson, D. Lhkagvasuren and C.M. Sheehy. 2006. *Impacts of Well Rehabilitation and Human Intrusion on Khulan (Wild Ass) and Other Threatened Species in the Gobi Desert.* Washington, D.C.: World Bank.

[20] The primary fur trade targets are Siberian and Altai marmot, wolf, red fox, corsac fox, red squirrel, snow leopard, brown bear, lynx and Pallas' cat. Limited fur trade exists for sable, badger, mink, weasels, steppe polecat, hare, muskrat, pika, chipmunk, and roe deer skins.

market value of $30 to $40 million. Although not traded in large volumes, rare and highly threatened species such as snow leopard are also traded. Driving the increase in trade volumes are the never before-seen prices paid by traders. Marmot skins sold to Russia for $0.19 per pelt in the 1980s now sell for fifty times as much on the Chinese border. A good wolf skin can command as much as $250 compared to just $5 twenty years ago. Red fox skins have gone from $4 to as much as $18 in the last decade. Corsac fox has jumped from $1 to $28 per skin. Lenok and Siberian white fish both sell for as much as $3 per kilo to markets in China. An average elk shed antler fetches $18 per kilo, blood antler $70 per kilo, genitals $30, and tail $30. Musk deer pods sell for as much as $45 per 100 grams[21]. Similar to the international market, domestic prices have steadily increased over the last decade, making it a lucrative business for many[22].

6.93 As a result, wildlife trade is causing severe population declines, with direct consequences for the overall Mongolian economy. There is near unanimous agreement among hunters, traders, and biologists in Mongolia that continued wildlife trade at the volumes reported is unsustainable. In the absence of other factors, the recorded declines appear to be directly linked to trade and over hunting, most of it illegal. Estimates suggest that 220,000 to 250,000 Mongolians actively harvest wildlife for personal consumption, domestic and international trade. More than 1 million Mongolians use wildlife in some form. Wildlife trade has skyrocketed in volume and value, and in 2004 was worth as much as $100 million to the Mongolian economy[23]. The associated declines have been rapid and drastic. Population surveys conducted over the last 30 years record dramatic declines for a suite of species, all of them of economic importance[24].

6.94 Unfortunately, declining wildlife numbers do not automatically mean decreased wildlife trade for two reasons. First, as a species decreases in number, it becomes more valuable. So long as profits exceed the costs of harvesting, there remains a market incentive to poach. This trend is already seen in Mongolia. Second, the productive capacity of the country (Mongolia's hunters) does not disappear; instead it turns its attention to new resources and the development of new markets. This happened in the

[21] Figures based on statistics provided by the UN Common Database at htpp://globalis.gvu.unu.edu

[22] For example, marmot that has doubled since the hunting ban instituted in 2005. Asiatic wild ass had no known market value, but can now be purchased for $0.80/kg in soum centers, black markets, and local container shops. Roe deer blood, corsac fox meat, Yakut moose meat, and many other local wildlife products are all now for sale. Taimen filets, once unknown in Ulaanbaatar's restaurant, now sell for $10.00/plate.

[23] Volumes include over 3 million marmots annually, 250,000 Mongolian gazelles, 200,000 corsac fox, 185,000 red fox, 170,000 red squirrel, 100,000 roe deer, 30,000 wild boar, 6,000 red deer, 4,500 Siberian ibex, and 3,000 Asiatic wild asses.

[24] Siberian marmots, numbering over 40 million in the wild in the 1940s, had dwindled to only a few million by 2002 (Batbold 2002); as few as 170,000 were reported for the eastern steppe in 2005, a region that once counted millions (Townsend and Zahler in press). Red deer were 130,000 strong in 1986. Twenty years later, there are only 8,000 to 10,000—a 92 percent decline in 18 years. Argali populations were recorded at 60,000 in 1985, but only 15,000 in 2001—a 75 percent decline in 16 years. Saiga antelope, counted at 2,500 in 1998, decreased about 50 percent in seven years (WWF 2004, Amgalan pers. comm.). Even the saker falcon, which in 1999 numbered 3,000 breeding pairs in Mongolia, had been reduced to 2,000 breeding pairs by 2004 (Shagdarsuren et al. 2004)

1960s and 1970s in Mongolia when the hunting brigades, faced with decreasing wildlife populations, did not quit but instead expanded the number of targeted species.

6.95 The depletion of wildlife resources has larger implications for the overall economy, which can probably best be compared to the depletion of a trust account. The wildlife resources in Mongolia can be thought of as a trust fund where the principal is made up of wildlife populations. The principal produces interest in the form of wildlife production used for medicine, food, and leather products. From a longer-term perspective, while present benefits from over harvesting may be impressive, they compare poorly with benefits that could be obtained with a lower harvest rate over time. Given the magnitude of the problem, the costs of policy neglect are having serious negative impacts to the present value and future earning potential of the country.

6.96 The Ministry of Nature and Environment (MNE) receives the second smallest budget of all ministries, and recent increases in the Ministry of Nature and Environment's budget have had no real impact on actual funding available for wildlife[25], despite the responsibility to engage in wildlife conservation and the legal obligation to earmark 50 percent of hunting-related revenues for conservation of the resource. In fact, the law requiring investment in the resource is generally not followed. In addition, the Public Sector Management and Finance Law (PSMFL) nullifies funding opportunities for local governments in this area.

The Illegal Economy for Forest Resources

6.97 Establishing an efficient and sustainable forest industry has been prevented by factors ranging from poor government policy to corruption. Forestry has been an important industry for Mongolia, and has great potential today as a source of sustainable livelihoods for those in forested aimags. However, lack of planning and active management, lack of inventory, loss of capacity, and corruption have together led to a significant degradation of forest quality, and have created virtual anarchy in the industry. Moreover, the forest sector suffers from poorly conceived and uncoordinated government policy. This policy vacuum, combined with poor law enforcement and the significant financial gains to be made from illegal forest harvesting, is preventing the establishment of an efficient and sustainable forest industry.

6.98 The government's policy of trying to reduce consumption, by restricting supply and setting a low harvest limit each year, has resulted in an increase in illegal logging, considerably above the sustainable harvest level. Statistics on deforestation and forest depletion in Mongolia are confusing and often conflicting. Mongolia lost an estimated 4 million hectares of forest in the last century, averaging 40,000 ha/year, although the

[25] Due to changes in accounting procedures brought on by the Public Sector Management and Finance Law, it appears that the MNE's budget has increased significantly in recent years, going from $2.3 million in 2001 to $3.8 million in 2004 (65.2 percent increase). But this is a misleading picture. Pursuant to the finance law, the MNE receives a consolidated budget that includes amounts for MNE's local branches, such as protected areas, Aimag environment offices, and local hydro meteorological stations. The apparent increases in the MNE's budget are due almost entirely to the inclusion of these local budgets as opposed to more money for the ministry's activities.

deforestation rate increased during the last decade of the century to approximately 60,000 ha/year (World Bank, 2003). Today, Mongolia's "forest territory" is estimated as 17.9 million hectares, of which around 1.8 million hectares are non-forested areas, 4.5 million are the southern saxaul scrub forests, and the remainder are the 11.5 million hectares of northern coniferous forests (Crisp et al., 2004). The lack of regular forest inventories makes it impossible to know the true extent or quality of forest resources.

6.99 The sustainable annual harvest volume for Mongolia's forests has not yet been unequivocally determined, although the most recent calculations put the amount at between 0.9 and 1.4 million m^3. The current rates of consumption are difficult to calculate, due to the lack of reliable data and the differences of opinion concerning the annual household consumption of fuelwood in areas outside the capital. The lower end of the estimated consumption, 1.74 million m3 annually, is far above the sustainable harvest level, and the upper end, 5.5 million m3, exceeds the sustainable harvest by a factor of five. Wood consumption also appears to be growing, due to factors such as the increasing population, booming construction industry, high rates of migration to urban areas, rising incomes for some, and the privatization of land. As a result, illegal forestry trade has a significant ecological and economic impact.

6.100 *Ecological impact*: Illegal timber harvesting clearly has reduced the size of forest inventories in those stands that are readily accessible or near urban areas, with valleys stripped bare of timber. In areas that are being utilized for private-use timber or fuelwood, non-professionals selectively cut trees of around 20-cm diameter to produce rough-sawn timber, as well as smaller trees to be used as scaffolding in construction work. In fact, removal of smaller trees could play an important role in thinning forest stands and making them more fire resistant if this was done according to a management plan. Currently, there is no effective management of this process and the benefits are not being realized. In areas where high-value timber is being felled, only the largest, most fire- and wind-resistant individuals are taken, damaging the structure of the forest and making it more vulnerable to fire. In addition, the wood that loggers consider to be scrap is trimmed from the trees and left in the forest. This dead wood results in a high fuel load, increasing the chances that a forest fire will burn fiercely and spread to the crowns of trees, rather than merely burning the undergrowth and keeping the fuel load low. Other potential problems resulting from the depletion of forest cover include impacts on the quantity and quality of water resources in the area, although the relationship is complex, as well as soil erosion.

6.101 *Economic impact*: By preventing people from harvesting timber legally and according to transparent procedures, the government denies itself important revenues. The Law on Fees for the Harvest of Timber and Fuelwood, enacted since 1995, incorporates fee schedules to raise revenues from resource use. Forestry companies are supposed to pay both license fees and stumpage fees in order to undertake forestry activities. Although difficult to estimate, collecting fees for all of the wood sold at timber markets could raise an additional 6.5 billion Tg ($5.4 million) annually. That is ten times the state revenue currently raised from forest-use fees, which was only 630 million Tg in 2003 (MNE, MOSTEC, Open Government Website in Wingard and Zahler, 2006). In addition, a large proportion of all timber used is not actively traded, being mostly used as

Fuelwood and private-use timber in rural areas. This wood should also be subject to fees, as should construction poles and pit props. In 2003, the 678 business entities operating in timber production and timber products paid 1.1 billion Tg in taxes (Report of the National Taxation Authority, 2004). This amount is insufficient, as the majority of timber cut by companies is done so secretly and illegally, and consequently all associated activities are inevitably hidden. If full taxes were collected on all forestry operations and cut wood, this sum would reach several billion Tg.

6.102 Last, but not least, illegal logging is also harming the national economy by preventing the development of the forestry industry and constituting a barrier to the establishment of a positive business environment. Illegal loggers have minimal costs—only fuel and labor—and do not pay taxes. They are thus able to sell their timber and wood products at a relatively low cost, hindering the competitiveness of those working within the law. This undercutting of the market value for timber lessens the economic contribution of the legal Mongolian forest sector; in fact, the Mongolia Forestry Sector Review (Crisp et al., 2004) found it to be marginal. In addition to the lessened contribution to the formal economy, unsustainable and illegal logging can also harm the livelihoods of those citizens dependent on natural resources. If timber supplies become depleted in an area, rural residents may have to travel further to get fuelwood, or buy supplies.

6.103 The lack of a coherent government policy for the forest industry is the main obstacle in achieving efficiency and sustainability in this industry. One of the main constraints to a sustainable and efficient forest industry results from the Mongolian government's policy of trying to reduce consumption. This is done by restricting supply and setting a low harvest limit each year—617,200 m3 in 2006. Not only is this far below any estimates of actual annual consumption, creating a situation where illegal logging and trade is bound to occur and corruption is becoming endemic, but it is even lower than the estimated sustainable harvest level, which has the dual effect of denying the state its proper revenue from forest-use fees, and denying companies the opportunity to operate legally in the industry. The policy has had no real benefit as far as the conservation of the resource is concerned; illegal operators have stepped in to supply the high demand for timber and have met no real resistance from the authorities charged with controlling the industry. Other constraints include corruption, weak law enforcement and an uncoordinated government policy towards the forest industry in general. Addressing these issues will take time and resources, which should be incorporated in the medium-term budget planning process and in implementing Mongolia's National Development Strategy.

7. POLICIES TO MANAGE THE EXTERNAL AND INTERNALLY-GENERATED RISKS

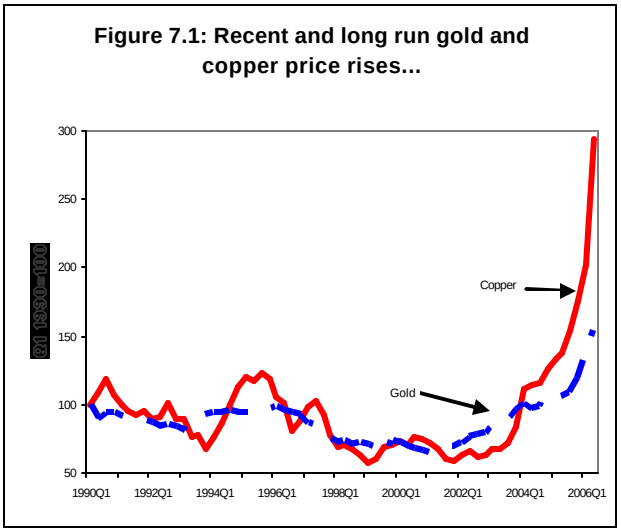
Mongolia must contend with risks to its ongoing high GDP growth path that could emanate from circumstances beyond its control and some due to policies or the nature of their implementation within the country. This calls for caution by the authorities in managing windfalls well for maintaining macroeconomic stability, with due consideration to fiscal and debt sustainability; investing such windfalls prudently to support productive investments and broad-based growth; and institutionalizing counter-cyclical fiscal policy through the budget rather than off-budget vehicles. Attention to implementing the new anti-corruption law and the Extractive Industries Transparency Initiative (EITI) in mining must take precedence as well.

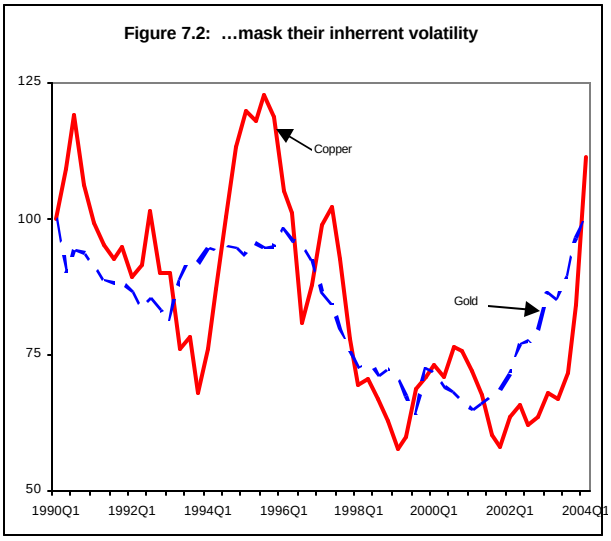
7.1 Mongolia has weathered the transition to a market economy remarkably well and in the process established a good track record of economic management. Yet it faces a considerable variety of risks to its continued growth—both exogenous and policy induced—a number of which have been touched upon here. Exogenous shocks include the risks associated with sharp downturns in international markets for gold and copper which have achieved historical highs during the past year and have helped cushion the impact of other adverse developments such as the still ongoing demise of the Mongolian garment industry. Another source of potential shock arises from rising global energy prices. There is also the threat of weather-related phenomena (e.g. *dzuds*) which have had catastrophic consequences in the past.

7.2 The country also remains vulnerable on the fiscal front and with respect to external debt. In order to manage these risks, the Mongolian society in general, and the Government in particular, will have to introduce policies to address issues related to: managing windfalls well for macroeconomic stability; investing such windfalls prudently to support broad-based growth; and institutionalizing counter-cyclical fiscal policy through the budget rather than off-budget vehicles. The Government is under pressure to spend its fiscal surpluses in good times on politically-induced populist public spending plans, especially during times of impending national elections (and to increase its fiscal deficit when times were bad). These pressures typically threaten fiscal sustainability over the long term. Existing perceptions in the country about weak governance and corruption that impose additional costs of doing business in Mongolia[1] pose risks that could derail the ongoing high GDP growth performance as well.

[1] According to the results of the recent *World Bank Investment Climate Assessment* (2006), survey respondents in Mongolia were unanimous in the view that corruption pervades every sphere of business activity in Mongolia today. More recently, in late 2006, Parliamentarians supported a move to allocate MTN 250 million to every electoral district of Parliament for "investing in the rural people". Some analysts have called this move "legalized corruption". (Source: UB Post, November 30, 2006).

This chapter aims to inform the policy decision-making process about identifying these risks and their management, and aims to stimulate debate among all stakeholders in this regard.





RISKS THAT NEED TO BE MONITORED AND MANAGED ARE MANY

Commodity Price and Trade-related Risks

7.3 The present boom in global commodity prices for copper has sent its price skyrocketing to unprecedented highs over the course of 2005-06. In real terms the price of copper has now recovered to highs last achieved in the early 1970s. To the extent that the major driver of the price increase may be a permanent increase in demand from the rapidly growing economies of Asia—principally China and India—the current high prices should prevail. But these high prices also contain an element of speculation by commodities traders on international markets, so that the present prices will inevitably not be sustained, and that the current boom will end, with potentially adverse economic consequences for Mongolia.

7.4 With copper and gold accounting for more than half of the country's export receipts a simulation of the effects of a sharp price decline is instructive. Assuming that copper and gold prices fall by 35 and 25 percent, respectively in 2010 the immediate effect of the terms of trade shock would be to reduce GDP growth by 0.5 percent that year. Even if these prices were to recover modestly, GDP growth would remain significantly lower. A sharp deterioration would also occur in the debt indicators with the NPV of debt-to-GDP rising by 5 percentage points and the debt-to-exports ratio increasing by 17 percentage points. In fact, this type of adverse shock occurred in 1996 when the international copper price crashed resulting in considerable economic and financial distress in Mongolia. In the current environment of buoyant prices it is easy to forget the inherent high volatility in copper prices which have in the past been so damaging for the country (Figure 7.1 and 7.2). Much the same is true for gold which has also seen its price on international markets rise to an all time high in 2006.

7.5 Mongolia is also quite vulnerable to the effects of an oil price shock.[2] This is compounded by the fact that almost all its oil imports currently come from one source—Russia. Between 2004 and 2006, the cumulative rise in oil prices has been US$39 a barrel, representing a price increase of 133 percent.

7.6 Increased trade and openness has meant that Mongolia is vulnerable on a number of accounts—from dependence on a narrow range of export commodities, increasing dependence on foreign direct investment, and remittances from Mongolians living overseas. Other sources of vulnerability arise from global developments such as the management of current global imbalances, rising oil prices and, eventually, an end to the current boom in mineral prices. All of these are risk factors for Mongolia and could derail the prospects for continued high growth in the absence of policy measures to reduce the adverse effect of these risks. Treading a careful path to ensure that these vulnerabilities are avoided or that their disruptive effects are minimized will require greater efforts to promote economic diversification and the private sector, a pragmatic approach to the challenges of economic geography and regionalism, and careful management of natural resource wealth and the environment. The previous three chapters have tried to address these economy-wide structural characteristics of Mongolia.

7.7 Vulnerabilities in the livestock sector exist as well that can derail the growth process. In fact, history has shown this to be true in Mongolia itself. With the outbreak of the "Hoof and Mouth Disease" in Mongolia in 2001, China and Russia banned Mongolian exports of all animal products. This has resulted in substantial losses in herder incomes and that of the cashmere processors, along with a dramatic decline in Mongolia's exports of meat products. This is one example of how outbreaks of animal diseases can damage productivity and limit market opportunities. To mitigate this risk, mechanisms for surveillance, diagnosis and disease mitigation (including vaccination programs) need to be strengthened in Mongolia, as well as improved access to information by herders and firms on sanitary and phyto-sanitary standards in other countries on the basis of which Mongolian products will be judged in it export markets. At the same time the country will also have to contend with some sources of domestic policy risk, which could equally pose a risk to its growth prospects. Risk that emerge from the threats of "Dutch Disease", fiscal policy and populist spending programs, and domestic policies that may influence the investment climate and the country's attractiveness to foreign direct investment and the perceptions of corruption and weak governance that tend to raise the costs of doing business.

7.8 Under these circumstances, the appropriate policy response is one which seeks to appraise each risk and implement a risk minimization strategy. In general, the optimal strategy would be to diversify the economy to reduce dependence on production and export of a few key commodities, increase fiscal resilience and deepen reforms and to increase domestic value added (Chapter 3 discussed ways of doing this). The present situation offers a unique opportunity for Mongolia to grow much more rapidly than it has in the past decade and a half, a possibility to sustain the recent growth rates in the range of 6-10 percent. This will be required too on account of the enormous pressing needs, to lift 32 percent of the population out of poverty and to provide employment for the new school graduates entering the job market annually as well as the unemployed or under-employed. In 2006, 27 percent of

[2] In 2005, Mongolia's petroleum products imports (of US$326.5 million c.i.f.) accounted for 12.1 percent of GDP and almost a third of its total import bill.

working age population was jobless and out of school.[3] Although, these are enormous challenges the country has a unique opportunity to meet them successfully.

The Risk of "Dutch Disease"[4]

7.9 The strong balance-of-payments position has lessened depreciation pressures on the local currency (togrog). In 2005, the togrog depreciated by only 1.7 percent compared with about 3 percent over 2001-05, but in 2006, the togrog appreciated in nominal terms by about 4 percent compared with end-2005. In 2005, the real effective exchange rate depreciated by 1.3 percent, compared to 10 percent in 2004.[5] The absence of real exchange appreciation up to 2005 suggests that so far the boom of the mineral resource sector has not hurt Mongolia's competitiveness. However, the recent appreciation of the nominal exchange rate, partly fueled by the massive foreign direct investment inflows in the early 2000s, primarily into the mining sector, and the ongoing commodity price boom, raises concerns about 'Dutch' disease.[6]

7.10 The 'Dutch' disease could manifest itself through a *spending effect* and a *resource movement effect*. The resource boom has already resulted in increased fiscal spending on non-tradables (such as civil service wages and social transfer programs), shifting labor away from the lagging tradable sector (in this case, manufacturing and tradable services) and increasing the prices of non-tradables. Such a shift is called "indirect-deindustrialization" in the economic literature. Resource booms also tend to increase the demand for labor in the mineral resource sector, thereby shifting it away from the lagging non-mining sectors. The longer the demand for minerals remains strong, the more likely it will be that 'Dutch' disease will afflict the Mongolian economy, making it difficult for Mongolia to build up its non-resource tradable sectors. Drawing on international experiences, alternative strategies for diagnosing and reducing the threat of "Dutch disease" are presented in Box 7.1.

7.11 Fiscal performance improved due to the high copper and gold prices that resulted in a jump in government revenues from taxes on profits of mining companies, but also due to improved budget management.[7] However, the quality of fiscal adjustment has deteriorated as the budget deficit has been kept in check by a reduction of 1.4 percent of GDP in the public capital spending and maintenance. This reduction was attributable to delays in the road fund financed by project loans. Given the planned changes to the tax code, there is a considerable

[3] This "jobless rate" measures the degree of underutilization of human capital in a country. Following international conventions, this includes those looking for a job (unemployed) and those who are not looking for a job and are not in school (idle).

[4] The term "Dutch Disease" originated in the Netherlands after the discovery of its North Sea Gas deposits. It refers to a situation when deindustrialization occurs in the economic structure of a country that has discovered large mineral deposits. This raised the value of the nations' currency (i.e. an appreciation) thereby making the manufactured exports less competitive with its trading partners. As a result manufactured imports increase and exports fall. A similar situation occurred in Britain in the 1970s with the exploration of its North Sea oil deposits. As the UK Pound appreciated, domestic workers demanded higher wages across the board in a situation where the country's manufactured exports were becoming non-competitive in the international markets and a recession followed. (*Source: UB Post, November 30, 2006*.)

[5] Source: Fitch, Mongolia Country Report, 2006.

[6] Between 1990 and 1999, only 25 percent of the US$117 million of foreign investment went to mining, while between 2002 and 2005, almost half of the total foreign direct investment of US$419 million went into copper and gold mining investments alone. (*Source: UB Post article entitled "The flip side of the mining boom", November 30, 2006*.)

[7] General government balance turned from a deficit of 2 percent in 2004 to a surplus of 3.2 percent in 2005.

level of uncertainty as to fiscal and public debt developments. The international creditworthiness agency Fitch expects that fiscal pressures will remain significant in the run-up to the 2008 elections.[8]

Box 7.1: Strategies for Diagnosing and Fighting "Dutch Disease".

"Dutch disease" is an economic concept that tries to explain the seeming relationship between the exploitation of natural resources and a decline in the manufacturing sector. The theory is that an increase in revenues from natural resources will de-industrialize a nation's economy by raising the exchange rate, which makes the manufacturing sector less competitive. Meanwhile, the appreciating local currency induces workers to lobby for higher wages, which cannot be undone when the commodity boom reverses (the so called "ratchet effect" on wages), thereby prolonging a recession that follows.

Diagnosing Dutch disease

Diagnosing Dutch Disease is difficult because it is difficult to prove the relation between an increase in the natural resource revenues, the real-exchange rate and a decline in the lagging sector. There are a number of different factors that could be causing the appreciation of the real exchange rate including the *Balassa-Samuelson effect*, which occurs when productivity increases affect the real exchange rate, large capital inflows, associated with foreign direct investment or a country's debt, and terms of trade changes. It is also difficult to identify the causes leading to a contraction of the lagging sector.

Reducing the threat of 'Dutch' disease

The threat of Dutch disease can be reduced by slowing the appreciation of the real exchange rate and by boosting the competitiveness of the manufacturing sector. The appreciation of the real exchange rate can be slowed down by sterilizing the boom revenues, i.e. saving some of the revenues abroad in special funds (e.g. State *Oil Fund of Azerbaijan* and *Government Pension Fund in Norway*) and bringing them back into the country slowly. By saving the boom revenues the country is also saving for future generations. In developing countries pressures to spend the boom revenues immediately on poverty alleviation schemes are very strong. Measures to increase the competitiveness of the manufacturing sector include, but are not limited to, investing in education and infrastructure.

Risks to Fiscal and Debt Sustainability

7.12 Macroeconomic stability depends on the stability of the terms of trade. A negative terms-of-trade shock is a threat to debt sustainability[9] and financial sector stability as Mongolia's domestic economy is very much affected by any fluctuations in the world copper and gold prices. According to IMF (2005), in the period 1994-2004 the correlation between the change of the world copper price and Mongolia's GDP was 0.59. High credit growth and remaining weaknesses in supervision and enforcement of prudential rules have heightened concerns about financial sector instability in recent years. The incidence of non-performing loans increased from 8.3 percent at the end-2003 to more than 10 percent at mid-2005, while other indicators of banking sector soundness were mixed.[10] Although costly,[11] the recent collapse of 50 SCCs is considered healthy for the economy in the long run. Credit risk management, bank corporate governance, and enforcement of applicable prudential rules remain weak, while deposit insurance is still in draft.

[8] Source: Fitch Mongolia Country Report, 2006.

[9] Although Mongolia's external debt is sustainable for now and its debt service is manageable due to high concessionality and the large export share of GDP (80 percent in 2004), external debt is high—much higher than the 40 percent threshold applied to countries at equivalent levels of policy performance.

[10] Source: International Monetary Fund (2005).

[11] The total cost is estimated at MNT 60 billion. Political pressure may force the government to cover the losses.

Box 7.2: Baseline Scenarios of Joint IMF/World Bank Debt Sustainability Analysis Assumes Continued High Output and Exports Growth.

Real GDP: Assumed to grow by 7 percent in 2006 until 2009 (as the development of Oyu Tolgoi Mine continues) and is expected to reach 11 percent by 2010 when this mines starts production. Thereafter, with the start up of additional new mining sector and infrastructure projects and continued development of the service sector over the medium term and beyond, the real GDP growth is assumed remain high, but at a lower rate of between 6 to 5.5 percent per annum between 2010 and 2014, before further slowing down to a steady-state growth rate of 5 percent after 2015.

Fiscal policy: In 2007 the overall budget deficit is assumed to be 2 percent of GDP. (This is 3 percentage points lower than the 2007 budget proposal of the Government and assumes continued progress in the implementation of the Government's ongoing reform agenda.

Balance of payments: Export growth is expected to slow down marginally in 2007-09 assuming copper prices revert to their long-term trend (in line with IMF WEO assumptions). Exports would then pick up substantially in 2010 when the mining production jumps (see above). Imports are also assumed to be higher, mainly consisting of mining-related equipment and construction materials/ machinery for infrastructure development. Beyond 2015, export growth is assumed to be 6.5-7.5 percent, while imports are assumed to grow at about 7 percent over the long term.

New borrowing assumptions: All external loans during the projection period are contracted on concessional terms. New borrowing is projected to remain at around US$150 million annually over the medium term, and to increase by about 2½ percent annually over the longer term. The average concessionality level of new external borrowing is assumed to be slightly lower than the current level.

Source: IMF/World Bank, "Mongolia - Debt Sustainability" Annex I of Staff Report for 2006 Article IV Consultations. IMF Country Report No. 07/30. December 18, 2006. pp. 29. www.imf.org

7.13 The most recent findings of a *joint IMF/World Bank Debt Sustainability Analysis (DSA)* for Mongolia (2006) found that its public debt would stay below their respective debt sustainability thresholds under a baseline scenario that assumed continued high GDP and export growth. Box 7.2 outlines the assumptions that were made in this DSA exercise. The NPV of the debt-to-GDP ratio (40 percent at end-2005), which is the only indicator initially above its threshold, is expected to decline to 32 percent in 2006, mostly as a result of the substantial nominal GDP growth. Alternative scenarios (Table 7.1) and "stress tests" that allowed for slower GDP growth rates and lower non-interest (primary) fiscal balances (back to historical average levels over the past decade), constant primary non-mineral fiscal balance at 2006 level[12], and a one-time permanent drop in GDP growth (say, due to adverse weather) showed that the Net-Present-Value (NPV) of debt-to-GDP ratio exceeding its threshold under a number of shock scenarios (See figures 7.3 and 7.4 for the impact of the baseline scenario, no-reform scenario and stress test on the debt sustainability thresholds.[13]) The largest deterioration of debt indicators was observed with lower GDP growth rates. This analysis concluded that Mongolia remains vulnerable to severe terms of trade shocks and, therefore, fiscal and debt sustainability should be closely monitored while maintaining prudent debt management.

[12] The assumption of an unchanged primary balance, which is typically used in IMF/WB debt sustainability assessments to represent a scenario without policy reforms, is not considered relevant for Mongolia, because export prices are currently exceptionally high and the budget has a substantial surplus. Instead, the "no-reform scenario" assumes an unchanged non-mineral balance.

[13] "Stress test" assumes that the adverse circumstances assumed in the alternative scenarios A and B all occur simultaneously. This yields the highest ratios in 2016.

Table 7.1: Alternative Shock Scenarios Highlight Risks to Maintaining Debt Sustainability

A. Fiscal DSA: Sensitivity Analysis on Public Debt, 2006-2026.
Alternative scenarios
A1. Real GDP growth and primary balance are at historical averages
A2. Primary non-mineral balance is unchanged from 2006
A3. Permanently lower GDP growth – (*assumes that real GDP is at baseline minus one standard deviation divided by the sq. root of 20 years, which is the length of the projection period.)*
B. Sensitivity Analysis on External Public and Publicly Guaranteed Debt, 2006-2026.
Alternative Scenarios
B1. Key variables at their historical averages in 2007-26.
B2. New public sector loans on less favorable terms in 2007-26 *(assumes that the interest rate is two percentage points higher than in the baseline scenario, ceteris paribus.)*

7.14 In this regard, it will be helpful if the authorities continue refraining from undertaking new non-concessional borrowing and issuance of sovereign loan guarantees (which would increase the Government's contingent liabilities and generate fiscal risks) in the short- to medium-term. Focus should be on attracting non-debt creating flows such as foreign direct investment. In order to maintain high GDP growth its "binding constraints" need to be removed—which was discussed in Chapter 2 of this report. This highlights the need to continue the Government's ongoing overall efforts to improve the investment climate for the private sector to operate in Mongolia and address impediments to doing business and trading activities within Mongolia and with the rest of the world.

FISCAL SPACE AND USE OF WINDFALL REVENUE

7.15 "Fiscal space" refers to a government's ability to undertake public spending without impairing its present and future ability to service its debt (i.e., solvency).[14] It is measured as the gap between the current level of public expenditure and the maximum level of expenditures that a government can undertake without impairing its solvency.[15] A number of factors influence whether and how fiscal space can be created and sustained. These include: initial fiscal conditions, the track-record of past fiscal management, the efficiency of public spending and credibility of government policies. For aid-recipients like Mongolia, the predictability and flexibility of aid also has an impact on its available fiscal space. Fiscal space can be created without the need for new borrowing through: (a) improvements in the efficiency of public spending that will free up resources for reallocation; (b) efficient revenue enhancement measures including tax measures and user charges; and (c) through continued access to external grant aid.

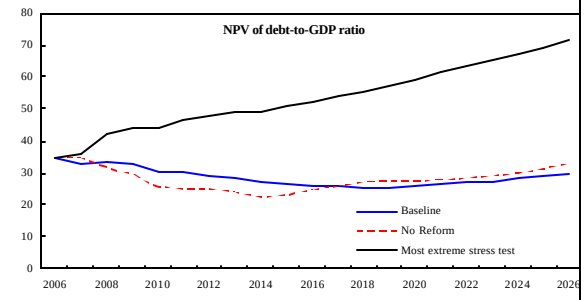
7.16 Recent empirical economic literature finds that although macroeconomic stability is necessary for growth, it is not sufficient. The transmission channels through which fiscal policy influences long-term growth need to be incorporated in the design of fiscal policy. This requires increased attention to the likely growth effects of the level, composition and

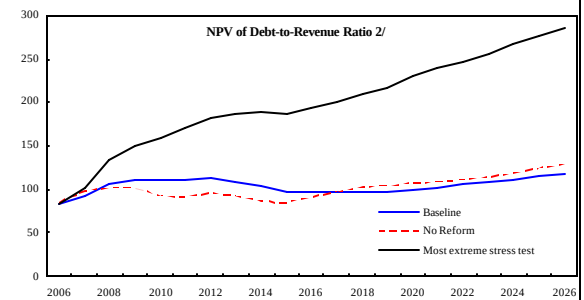
[14] This implies that the present value of primary surpluses plus seignorage revenue should at least add up to its outstanding debt. See Agenor and Montiel (1996) and Easterly and Serven (2003).

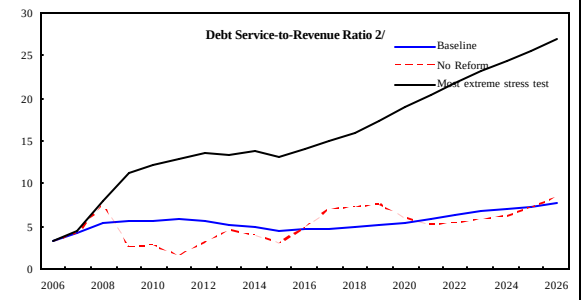
[15] Source: International Monetary Fund "Fiscal Policy for Growth and Development: An Interim Report", Development Committee of the Board of Governors of the World Bank and the IMF, Report No. DC2006-003. April 6, 2006.

efficiency of public spending and taxation. The record of stable macroeconomic management in Mongolia during the 20th century obscures the fact that, like many other countries that stabilized their economies, it did so by cutting government spending on public capital formation and the maintenance of existing infrastructure despite its negative impact on growth and poverty reduction (See Chapter 1).

Figure 7.3. Public Debt Sustainability Scenarios 1/





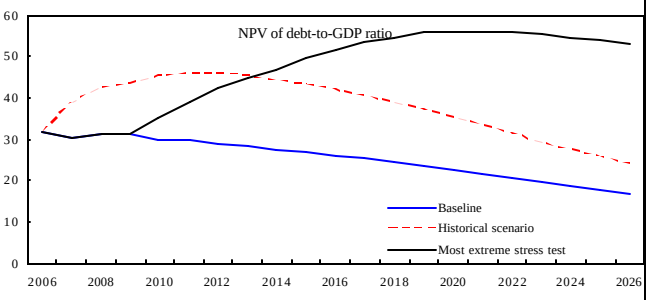


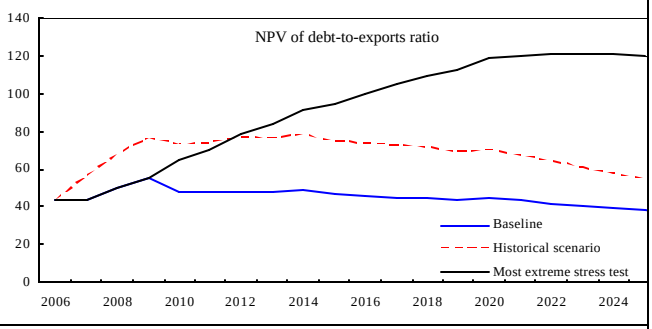
Source: IMF, Annex 1 – Debt Sustainability Analysis, in Staff Report of 2006 Article IV Consultations. Dec. 2006.

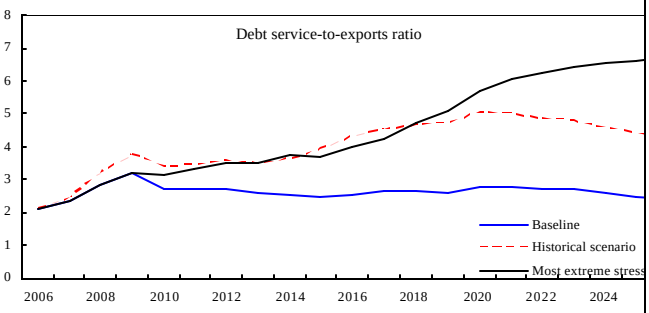
Note: 1/ Most extreme stress test is test that yields highest ratio in 2016

2/ Revenue including grants.

Figure 7.4. External PPG Debt Sustainability Scenarios 1/







Source: IMF, Annex 1 – Debt Sustainability Analysis, in Staff Report of 2006 Article IV Consultations. Dec. 2006.

Note: 1/ External public and publicly guaranteed debt sustainability thresholds for the three above indicators are 40 percent, 150 percent and 20 percent, respectively.

2/ Revenue including grants

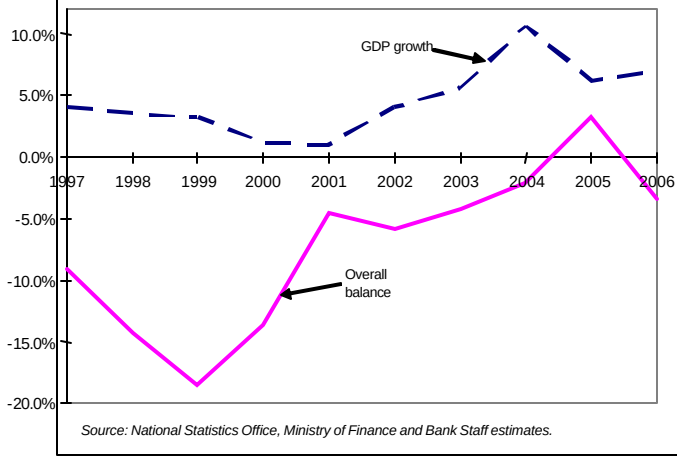
7.17 A growth-oriented approach to fiscal policy follows from the understanding of the country's binding constraints to growth and to then ascertain whether fiscal considerations could be used to address some of these constraints. An increase in fiscal spending may also be considered to address a growth constraint if possible fiscal savings from increased efficiency

or cuts in low-value expenditure are inadequate.[16] The "growth diagnostics" exercise that was conducted for Mongolia in the context of this Country Economic Memorandum (CEM) showed that private investment and growth have been constrained by distortionary taxes, infrastructure bottlenecks that translate itself into high transport costs, negative coordination externalities that have adversely impacted on Mongolia's ability to diversify its exports and markets abroad and discontent with decisions and administrative processes in Government. (See Chapter 2 and Annex II).

7.18 While the issue of composition and efficiency of public investments in Mongolia will be examined in greater depth in the forthcoming World Bank *Public Expenditure and Financial Management Review* (PEFMR), this section of the chapter discusses a key issue that is currently being debated in Mongolia and among Mongolia-watchers abroad—namely, how should one use the windfall revenues and fiscal surpluses that the Government is accumulating in a manner that makes fiscal policy to become more forward looking towards achieving broad-based growth for many years to come?

7.19 One aspect of this would be for Mongolia to run counter-cyclical fiscal policy by design.[17] The evidence to date suggests that fiscal policy has been mostly pro-cyclical (Figure 7.5). With the recent surge in budgetary revenues arising from the global boom in gold and copper prices and the looming prospects of significant expansion of mining output through new operations, there is a need for policy makers to anticipate the inevitable spending pressures that will arise with respect to windfall revenues. Thus, it is critical that Mongolia prepare for this and carefully consider options to manage this, including through adoption of an appropriate fiscal framework and with clear *fiscal rules*. Transparent, flexible and well designed fiscal rules can help fiscal policy by restraining political pressures for an expansionary policy. Numerical targets, like the 3 percent deficit target of the EMU Stability and Growth Pact provided incentives for the new member states to undertake fiscal consolidation in a responsible manner. In Australia, New Zealand and the U.K., for example, where fiscal consolidation was achieved, the fiscal rules emphasized transparency in fiscal reporting and allowed them to build fiscal credibility.[18] Rules defined in *cyclically-adjusted* terms allow for automatic stabilizers but restrain pro-cyclical tendencies. Chile has been successful in using

Figure 7.5: Fiscal Policy has been Largely Pro-cyclical



Source: National Statistics Office, Ministry of Finance and Bank Staff estimates.

[16] In this regard, one must of course consider the costs of such financing compared to the benefits and be consistent with maintaining macroeconomic stability. Detailed sectoral assessments, with data on unit costs and related efficiency measures, are required to estimate fiscal savings alternatives.

[17] Fiscal policy could be less counter-cyclical if the economy were more financially developed.

[18] The U.K. adopted a "Golden Rule" in 1997 together with a 40 percent ceiling on the net public debt to GDP ratio.

such stabilizers since 2000 over the medium term.[19] Similarly, Brazil and South Africa have used their respective *Fiscal Responsibility Laws* to improve sub-national fiscal discipline.

7.20 The establishment of an earmarked Development Fund in 2006 is a welcome step in this direction but should only be considered as a transitional arrangement as much more needs to be done in this area to safeguard savings and to ensure that they generate a positive return for the country when they are spent. To this end, having a budget management framework, fiscal rules, and accompanying institutional set-up, that formally and transparently links the Government's Public Investment Program (PIP) with the existing MTBF is imperative. This task will require adequate time and preparation, but the fact the Mongolia has a fully-functioning GFMIS, it is already a step ahead.

7.21 Meanwhile, the operational efficiency of public spending depends on rules and incentives that motivate and guide the performance of civil servants. Effective management is critical in this regard, which entails putting in place effective internal controls and regular audits. A good ex-ante process of vetting projects for costs and benefits and a system of ex-post impact assessments will minimize resource waste. Hence, as questions of fiscal space for productive government spending are considered, the issue of efficiency and the quality of budget systems and public sector management processes must be addressed to provide assurance to the citizens that such public expenditures are in fact productive. *Linking the MTBF and the PIP of the Government through a formalized process of vetting costs and benefits is, therefore, imperative in Mongolia. Then determine what is essential in the PIP (i.e., a "Core Productive Public Expenditure Program") and protect these from the vagaries of future fiscal adjustment.*[20]

7.22 Given that all governments face an inter-temporal budget constraint when making fiscal policy decisions (i.e. they need to maintain fiscal sustainability over time), it defines the limits of the room for fiscal maneuver. *One must consider the future spending implications of current spending programs* (i.e. some expenditure programs, once started, in effect pre-empt *future* fiscal space). The availability of significant aid inflows to Mongolia (in per capita terms one of the highest in the developing world), has helped bridge the gap between the country's growth and development needs (including physical infrastructure, delivery of critical health and education services, protection of the poor and vulnerable) and its public financing capabilities (due to its narrow tax base, vulnerable existing public debt situation). Inevitably, one cannot ignore the fact that public expenditure and taxation policies are fundamentally political choices which reflect the political economy and institutional arrangements in Mongolia. Under these circumstances, *fiscal policy decisions of the government need to be informed by ex-ante policy analysis that clarifies the likely growth and distributional consequences of alternative choices. In addition, planning and fiscal institutions in the country need to enable the political actors make informed fiscal policy decisions in Parliament by taking a longer term perspective and for them to support a contestable process for determining policy decisions.*

[19] It uses a structural surplus target of 1 percent of GDP. Source: IMF (2006), Box 1, pp.7.

[20] To ensure transparency in the design and monitoring of this core spending program, not only of the public accounts but also in communication with the public, an appropriate institutional set-up in government may be needed (e.g. a Fiscal Policy Committee).

GOVERNANCE AND ANTI-CORRUPTION

7.23 The efficiency of resource use, and the growth impact of fiscal policy, is intrinsically linked to the incentives and accountability for performance, and the quality of institutions and governance in the public sector. Governance and corruption are related but are distinct from each other. Typically, "governance" is defined as the traditions and institutions by which authority in a country is exercised for the common good.[21] This includes:

- The process by which those in authority are selected, monitored, and replaced (the political dimension);
- the government's capacity to effectively manage its resources and implement sound policies (the economic dimension); and
- the respect of citizens and the state for the country's institutions (the institutional respect dimension).

7.24 On the other hand, corruption is traditionally more narrowly defined as "the abuse of public office for private gain".[22] It should be noted, however, that the responsibility of corruption does not only lie on the public sector officials but on anyone (especially powerful private interests) who exerts undue influence, and those who are unduly influenced, in providing access to a public service (for example, favoritism toward particular firms in the awarding of public procurement bids and contracts).[23] In this sense, corruption would be considered to have taken place even if the act was not strictly illegal.

7.25 Less than a dozen years ago, few comparable, worldwide measures of governance or corruption existed. However, in recent years, through the efforts of institutions such as the World Bank (the Governance Indicators), the World Economic Forum (the Executive Opinion Survey), Transparency International (Corruption Perception Index), Freedom House (political and civil liberties and freedom of the press), and numerous other institutions, we have sought to counteract this widespread perception. In order to more closely define and measure Governance, the World Bank has constructed a set of aggregate *Governance Indicators*. These now cover more than 200 countries and are based on more than 350 variables obtained from dozens of institutions worldwide, including the survey data. The Governance Indicators capture six key dimensions of institutional quality or governance, and measure, through two indicators each, the political, economic, and institutional dimensions of governance. Box 7.3 provides a summary of these dimensions.

[21] Taken from Kaufmann (2006).

[22] Source: Kaufmann (2006).

[23] Powerful private interests often exert undue influence in shaping public policy, institutions and state legislation. For instance, the public sector is not the sole decider of a country's investment climate, nor is the private sector a passive recipient of the investment climate. Reality involves a complex interplay of corporate and public governance and policymaking, whereby powerful segments of private sector also play a very important role in shaping public policy, legislation and regulations that define the rules of engagement in the private sector and the business environment within which firms operate.

Box 7.3. The World Bank's Worldwide Governance Indicators – A Way to Evaluate the Quality of Governance in and across Countries.

The *Worldwide Governance Indicators* define governance as the set of traditions and institutions by which authority in a country is exercised. The political, economic, and institutional dimensions of governance are captured by the following six aggregate indicators:

- ***Voice and Accountability*** - the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.
- ***Political Stability and the Absence of Violence*** - perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism.
- ***Government effectiveness*** - the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies
- ***Regulatory Quality*** - the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
- ***Rule of Law*** - the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.
- ***Control of Corruption*** - the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Source: World Bank. www.worldbank.org/wbi/governance

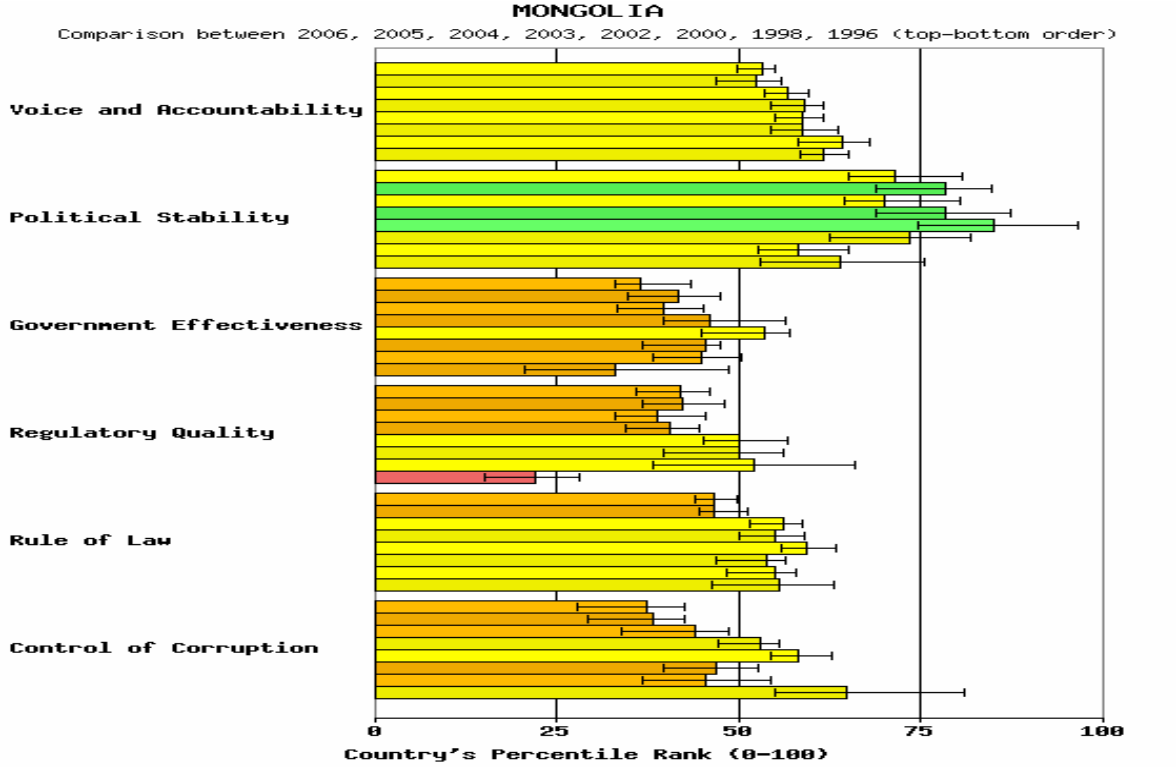
7.26 Figure 7.6 presents the World Bank aggregate Governance Indicators for the period 1996-2006. It shows that, apart from the political dimension which has improved in some years, there has been a relative deterioration in governance in Mongolia as defined by five of the six Governance Indicators. It should be noted that each bar in the table represents percentile ranks, i.e. the percentage of countries worldwide that rate below Mongolia (subject to margin of error). Thus, higher values indicate better governance ratings (and thus a larger number of countries that are worse off that the country in question). Percentile ranks have been adjusted to account for changes over time in the set of countries covered by the governance indicators. Clearly, margins of error in the use of these World Bank Governance indicators are not trivial, and caution in interpreting the results is warranted.[24]

7.27 A more direct way to examine this issue is to conduct country-specific surveys of firms and households. Various studies and surveys have been recently undertaken in Mongolia in this regard (e.g., investment climate assessment, USAID corruption report, WBI indicators), which suggest that the perception of corruption in the public sector is on the rise in Mongolia. The *World Bank Investment Climate Assessment (ICA) and Trade Integration Study* (World Bank 2006e) found that corruption pervades every sphere of business activity, be it urban firms or rural farm-based activities. In international trading-related business activities, the unpredictability of the time it will take to clear customs was a key concern. Paper-based processes are the main source of delay in customs. Past automation efforts have not solved the problem. Within Customs it is the customs valuation processes that appear to be a locus of corruption in Mongolia. The ICA(2006) found that a quarter of firms that export and just over a fifth of the firms that import reported having to pay a bribe in order to expedite

[24] These indicators have been available since 1996 and these margins of error have declined. (Source: Kaufmann, 2006)

customs clearance or avoid excessive duties. Incentive structures and administrative processes within the Customs General Administration facilitate corrupt practices as well. The granting of import duty exemptions also provides opportunities for rent-seeking.

Figure 7.6: The Quality of Governance in Mongolia, 1996-2006 Compared



Source: Kaufmann D., A. Kraay, and M. Mastruzzi 2007: Governance Matters VI: Governance Indicators for 1996-2006.

Note: This chart depicts the percentile rank on each governance indicator. Percentile rank indicates the percentage of countries worldwide that rate below the selected country (subject to margin of error). Higher values indicate better governance ratings. Percentile ranks have been adjusted to account for changes over time in the set of countries covered by the governance indicators. In the Bar Chart, the statistically likely range of the governance indicator is shown as a thin black line. For instance, a bar of length 75 percent with the thin black lines extending from 60 percent to 85 percent has the following interpretation: an estimated 75 percent of the countries rate worse and an estimated 25 percent of the countries rate better than the country of choice. However, at the 90 percent confidence level, only 60 percent of the countries rate worse, while only 15 percent of the countries rate better.

7.28 The ICA (2006) evidence indicates that the licensing and inspections regime in Mongolia suffers from red-tape and rent-seeking. This is similar to the case with the other specialized agencies that deal with the private sector—the tax and customs administrations) do. There is clearly a need for reform. But because licensing and inspections involve technical details that vary from activity to activity, and because they serve an underlying public purpose, which risks being undermined in a hasty attempt to eliminate red tape, the reform agenda needs to be elaborated more carefully. There are instances, such as in the case of veterinary and hygienic inspections in the livestock sector, where the need is for more and better inspections, not fewer. The same may be said for environmental inspections. The private-public governance challenge is not only confined to the domestic players in a country. In Mongolia, this is particularly important due to the ongoing discussions between the Government and interested foreign mining companies on mining-sector investment agreements, taxation and licensing arrangements. The Government's stated commitment to

implement the *Extractive Industries Transparency Initiative (EITI)* is a welcome step in improving the transparency and corporate governance in the Mongolian mining sector.

7.29 Public opinion surveys conducted since 1995 and recent discussions conducted in the context of the World Bank's ICA (2006) and the 2007 Governance & Anti Corruption (GAC) stakeholder consultations indicate increasing public concern over corruption in Mongolia. There remains the need to tackle governance issues in Mongolia in the near-term from three perspectives, namely: (i) consolidating reforms to improve fiduciary controls in Government; (ii) implementing enhanced transparency measures; and (iii) putting in place direct anti-corruption reforms, such as asset and income declarations by senior public sector officials and Parliamentarians, tax, audit, conflict of interest disclosure programs. This approach allows for acting on both reducing the perceptions (by increasing transparency) and actual corruption (through fiduciary and anti-corruption programs).[25]

7.30 Over the last 15 years, the Government has put in place the foundation for a robust public finance management framework. The elements of this foundation include: (i) a fully functional Treasury Single Account system; (ii) a government-wide Financial Management Information System with full financial commitment controls; (iii) a chart of accounts that fully comply with the International Public Sector Accounting Standards; (iv) a Debt Management Office within the Treasury Department where an effective debt recording and monitoring system is housed; and (v) an internally consistent and ambitious Public Finance Management Law. These elements have contributed to significantly improved fiduciary controls and aggregate budget outturns. However, *reforms are needed to consolidate these into a results-based public finance management framework that is linked to the Government's Action Plan, its medium term budget framework, annual budget and public investment program in any given year.*[26]

7.31 In an endeavor to improve public accountability and citizen monitoring, although the Government has made tangible gains in improving public sector systems and processes, there is very little disclosure of budget, public debt, or procurement information to entities outside of parliament. Even data and analysis conducted to inform the design of public policy, such as raw poverty data from the Living Standard Measurement Survey, Environmental Impact Assessments, etc., are not effectively placed in the public domain. This lack of disclosure perpetuates a perception of mismanagement of public resources and fuels unsubstantiated rumors to become rampant. The Government is addressing the issue of transparency by instituting a policy of better information disclosure and by recently promulgating a more effective Anti-Corruption Law. The implementation of this Law has just begun and the World Bank, among Mongolia's other external partners, is supporting this effort through a technical assistance through grant funds. (Table 7.2).

[25] The World Bank is continuing to support traditional core competencies; helping with capacity building, sharing knowledge, and focused reforms in key institutions such as judiciary, customs, tax, procurement through its ongoing Governance Assistance Project (GAP) and other technical assistance in cooperation with the Government and Mongolia's other external development partners. It is also supporting initiatives for transparency, freedom of information, and an independent media, participatory anti-corruption program.

[26] The World Bank Governance Assistance Project (2006) is supporting the government's ongoing efforts in this regard. Fiscal TA from the International Monetary Fund, especially in the area of improving fiscal reporting, is underway as well.

Donor Organization	Table 7.2: Summary of Donor Activities in Combating Corruption Project description
World Bank	**Governance Assistance Project. A**ctivities proposed under the project are: 1) Improve the existing framework for anti-corruption, including (i) reviewing the current anti-corruption framework and providing recommendations in order to bring Mongolian laws in compliance with the UNCAC, with assistance in implementing these recommendations; (ii) developing and implementing a framework for conflict-of-interest prevention and resolution, with a focus on asset and income declaration and disclosure; (iii) raising awareness on conflict of interest issues. **AAA:** Investment Climate Assessment **TA** on EITI **TA** on Draft Anti-Corruption Law **The Legal and Judicial Reform Project** aims to enhance public trust and confidence in the legal system and in the judiciary. This project supports increased citizen access to legal information, the creation of specialized courts, and improved legal education. The project consists of four components. 1) Establish an administrative court system to promote transparency and governance. 2) Capacity-building to produce a unified system of legal and judicial information, including establishment of a pilot center for Mongolian lawyers, judges, and the public 3) Improved legal education in two pilot law schools 4) Strengthen the Project Implementation Unit through the provision of consultants' services and training.
UNDP	**National Integrity System Enhancement:** This project supports implementation of the National Program for Combating Corruption and UNCAC. The specific objectives include increasing public awareness, improving institutional capacity to enforce, monitor, and evaluate the legal and regulatory framework to combat corruption. **Strengthening Ethics and Integrity for Good Governance.** The project will support the Ministry of Health in designing, piloting and implementing a system of ethics and integrity for good governance in the health sector. The objectives of the projects are: 1) to increase transparency and accountability of the MOH and selected health organizations through identifying and addressing bottleneck areas; 2) to promote ethics and integrity among medical staff through open discussions, training, workshops and code of conduct.
ADB	**Financial Regulation and Governance Programs (FRGP).** The FRGP programs contributed broadly to efforts to combat corruption. In 2004, the ADB launched a specific program to assist the Government establish a centralized public procurement system. **Governance Assessment** Governance Reform Program (GRP). Efforts under the second phase will enhance public sector accountability and efficiency, and improve in delivery of key public services. GRP will support implementation of public sector administrative and financial management reforms.
TAF / USAID	The Asia Foundation, in partnership with The U.S. Agency for International Development (USAID), is implementing an initiative to reduce the incidence and scope of corruption, strengthen institutional and public capacity to combat corruption, and to empower the public to demand transparency and accountability. The Asia Foundation (TAF) will influence public perceptions and engage civil society in combating corruption by raising awareness, and fueling intolerance. Program elements include: **Advocacy and Institution Building** TAF works in partnership with local non-governmental organization to advocate for legal and regulatory change that combats corruption. TAF sponsors study tours and targeted training to inform legislative debate and build institutional capacity. TAF assistance supports the passage of the pending Anti-corruption and Anti-money Laundering Laws and the establishment of the Anti-Corruption Agency. TAF will assist the National Audit Board, The Prosecutor General and other agencies that are critical to combat corruption. **Corruption Benchmarking: Corruption Monitoring System (CMS)** TAF has development a robust set of corruption monitoring tools and indexes to serve as a barometer of success in combating corruption. TAF, in cooperation with Transparency International, conducts a bi-annual survey to assess the sectors, institutions, scope, location and impact of corruption. The first survey has been completed. **Strengthening Media to Combat Corruption** Media training is tailored to enhance investigative reporting skills and to encourage journalist to report for the benefit of their communities. TAF will organize a competition to encourage media programming and coverage of corruption, among other activities.

Source: Compiled by World Bank, 2007.

7.32 Partly in response to the recent household and firm surveys and related studies, in October 2005 Mongolia ratified the *United Nations Convention against Corruption* (UNCAC). Parties to the convention must create a transparent procurement system; institute merit hiring for civil servants; toughen criminal penalties for bribery and other corrupt acts; permit law enforcement authorities to freeze, seize, and confiscate the proceeds of corruption; and take a host of other measures to combat corruption. It has enacted a new *Law on Anti-Corruption* in 2006, and immediately thereafter established a *National Anti-Corruption Council*—an informal Parliamentary body mandated with the responsibility for oversight on the corruption matters in Mongolia. A formal *Anti-Corruption Agency* was also established in January 2007 which has been charged in the first instance to collect and process the asset and income disclosure and declaration information expeditiously. Staffing for that office is currently being undertaken.

Box 7. 4: Reform Measures to Improve Transparency in Government.

Research shows that transparency helps improve governance and reduce corruption—essential ingredients for better development and faster economic growth. Within a concerted, practical, and comprehensive pro-transparency strategy, a basic checklist of concrete reforms, which countries may use for self-assessment might include the following items:

- public disclosure of assets and incomes of candidates running for public office, public officials, politicians, legislators, judges, and their dependents;
- public disclosure of political campaign contributions by individuals and firms, and of campaign expenditures;
- public disclosure of all parliamentary votes, draft legislation, and parliamentary debates;
- effective implementation of conflict of interest laws, separating business, politics, legislation, and public service, and adoption of a law governing lobbying; publicly blacklisting firms that have been shown to bribe in public procurement (as done by the World Bank); and a requirement to "publish-what-you-pay" by multinationals working in extractive industries;
- effective implementation of freedom of information laws, with easy access for all to government information;
- freedom of the media (including the Internet);
- fiscal and public financial transparency of central and local budgets, adoption of the IMF's Reports on Standards and Codes framework of fiscal transparency, detailed government
- reporting of payments from multinationals in extractive industries, and open meetings involving the country's citizens;
- disclosure of actual ownership structure and financial status of domestic banks;
- transparent (Web-based) competitive procurement;
- periodic implementation and publicizing of country governance, anti-corruption and public expenditure tracking surveys, such as those supported by the World Bank;
- Transparency programs at the city level, including budget disclosure and open meetings.

Source: Kaufman, Daniel (2006), "Myths and Realities of Governance and Corruption". The World Economic Forum • Global Competitiveness Report 2005-2006 • Chapter 2.1, Box 1. World Bank.

7.33 Effective implementation of the relevant policies and anti-corruption regulations should be the focus of the authorities in the coming year in order to reap the initial benefits/outcomes of fighting against corruption and improving governance in Mongolia. Box 7.4 outlines reform measures that need to be adopted to improve transparency in Government. Further efforts towards improving the efficiency and effectiveness of public sector management, upgrading professional skills and ethics of employees, should continue. Implementation of the approved Tax and Anti-Corruption codes is needed as is improvement of administrative processes to support the implementation of these key legislations. Public

disclosure initiatives need to facilitate the administrative reforms; and foster partnership and participation of civil society, professional groups, and private with the public sectors. This will also help citizen monitoring of the progress of overall reform implementation and assist the government to credibly communicate its goals and outcomes toward implementation of the MDG-based National Development Plan.

Environmental Risks

7.34 The rapid economic growth and changing structure of the economy brings with it greater pressures that erode the quality and contribution of natural resources to the Mongolian economy by the very nature in which they are being utilized. The sooner one begins to address these risks and put in place mechanisms and institutional frameworks to manage them the better. Fruits of these efforts will take time under any circumstances, so time is of the essence here.

7.35 In the agriculture and livestock sector, for instance, considerable environmental risks emerge due to the dependence of the rural population on Mongolia's vast open pastureland for the nutritional intake of the majority of their animals. Given that the country is already prone to extreme climatic conditions that have in the past caused high rates of livestock mortality these environmental risks on the land tend to further jeopardize rural livelihoods. In addition to exogenous factors (such as harsh weather) man-made factors (such as poor management of livestock by inexperienced herders) were certainly a contributing factor to the high losses in the 1999/2000 and 2000/2001 *dzuds*. The overstocking of livestock has led to accelerated pasture degradation and, consequently, to poor nutritional quality of new livestock herds. This, in turn, also accentuates livestock mortality.

7.36 Coping with these risks requires a multi-dimensional approach. Lower level risks can be mitigated by improved pasture and livestock management practices. These include: the increased use of alternative sources of nutrition for animal, protecting seasonal pastures, preserving pastures by limiting stocking levels, and strengthening veterinary services. The government is currently implementing a program for the rehabilitation of wells through the Ministry of Food and Agriculture, which can also have a significant impact on the sector and its ability to withstand and mitigate environmental risks. Water is a critical factor in the management of pasture land, and the careful identification of sites can help to open up new pastureland for herders. Pastureland management, therefore, needs to recognize the linkages between land, water and the livestock sector. The establishment of the National Council for Pastureland Management is an important first step in this regard. To become effective, this Council will require permanent staffing, analytical capacity, and the authority to link to local authorities, so as to advise them effectively on pasture planning and management issues. In addition, the government is supporting the development of livestock insurance for more extreme climatic impacts, and this has the potential to become a market-based tool for mitigating environmental risk. Given the potential scale of liabilities, the key to the sustainable availability of livestock insurance is likely to be the extent to which the risk can be transferred out of the country and into the international re-insurance market. The opportunities for this may be limited until the regulation of the sector is improved.

7.37 Environmental impacts from mining operations have the potential to be a significant risk for the sustainability of the mining sector and the Mongolian economy. As indicated in the World Bank report (2006) *Mongolia – A Review of Environmental and Social Impacts in*

the Mining Sector, the environmental record for the Mongolia mining sector is mixed at best with many of the ongoing operations managed in a sub-optimal way leading to a significant environmental damage and production losses. The Government is working to address these challenges by enacting and updating a series of environmental laws, preparing regional economic developments plans, strengthening its monitoring and compliance systems as well as the technical skills of its personnel in MNE and other relevant government agencies, and ability to back up Government's plans by better and systematic environmental impact and projection analysis.

7.38 Finally, air pollution represents an additional risk, particularly in urban areas Winter air pollution in Ulaabaatar has increased significantly over the last decade primarily due to the large increase in the use of heating stoves and small heat-only boilers. The rapid growth of motor vehicles also have increased air pollution burden. Based on the emissions data, it is estimated that the annual average ambient concentration of fine particulates (PM_{10}) in UB is about 210 $\mu g/m^3$, compared to the maximum threshold of 100 $\mu g/m^3$ adopted by the World Bank and other countries. The public health impact of such high level pollution is significant and range from additional child asthma cases per year (2,530) and restricted activity days per year (6,325,000). These damages could double in the next ten years if the current trends in population growth, heating modes selection, and urban transport continue. The Government has recognized that the air pollution problem has become a critical development issue because of its multi-dimensional aspects, not only in terms of direct causes, such as heating modes, dwelling patterns, and urban traffic but also with underlying linkages to income levels, land use policy, and urban infrastructure planning and execution. Thus, the solution must be programmatic – using a combination of various measures to achieve short-to-medium term improvements and long term clean air objectives. Also, to most effectively allocate resources and achieve results, there is a need to improve the alignment of government and donor programs to address the variety of issues which contribute to air pollution, as well as for better monitoring and evaluation of the progress made and adjustments needed.

REFERENCES

Agenor, Pierre and Peter Montiel (1996), *Development Macroeconomics*. Princeton: Princeton University Press.

Asian Development Bank and Ministry of Education, Culture and Science (2005). "Technical and Vocational Education and Training Sector Analysis," Ulaabataar, Mongolia.

Barro, R. and J. Lee (1996) "International Measures of Schooling Years and Schooling Quality," *American Economic Review* 86 (2): 218-23.

Batbold J. (2002) "The problem of management of Marmots in Mongolia." in K. Armitage and V.Y. Rumiantsev (eds.) *Holarctic Marmots as a Factor of Biodiversity*—Proceedings of the 3d International Conference on Marmots, Cheboksary , Russia, 25-30 August 1997 (K.B. Armitage and V.Y. Rumiantsev, eds.). ABF Publishing House, Moscow.

Bayarsaihan T., and Coelli T.J., *Productivity Growth in pre-1990 Mongolian Agriculture: Spiralling Disaster or Emerging Success*, Journal of Agricultural Economics, Vol. 28, March 2003, pp. 121-137(17).

Biller, Dan (1994), *Informal Gold Mining and Pollution in Brazil*, Policy Research Working Paper #1304, World Bank, Washington, D.C.

H. Bofinger, *"Preliminary Results on Air Cargo Research,"* undated, processed

Federico Bonaglia and Kiichiro Fukasaku, *Export Diversification in Low-Income Countries: An International Challenge After Doha*, OECD Development Center working paper #209, June 2003, p.18.

Broadman, H. (2005) *From Disintegration to Reintegration: Eastern Europe and the Former Soviet Union in International Trade*, Word Bank.

Blomström, Magnus and Ari Kokko (2007). "From Natural Resources to High-tech Production: The Evolution of Industrial Competitiveness in Sweden and Finland," in Lederman, Daniel and William Maloney (eds.). *Natural Resources: Neither Curse nor Destiny*, World Bank and Stanford University Press: Washington, DC. 2007. pp. 213-258.

Buitelaar, Rudolf M. (2001), *Mining Clusters and Local Economic Development in Latin America*, http://www.carleton.ca/economics/seminar%20papers/Buitelaar-Nov1-2001.pdf, p. 17.

Capital City Specialized Inspection Agency (2003) *Inspections of Illegal Wood Business* Ulaanbaatar, Mongolia: State Specialized Inspection Agency.

Carvajal, Miguel and Wray, Natalia (1996), *Relacion Entre Pueblos Indigenas y Mineria Aurifera*, PRODEMINCA, Quito, Ecuador.

Centre for Forestry and Hydrology Research (2004) *Mongolia's Forest Resources*, Ulaanbaatar, Mongolia.

Chandra, V. (2006) *Technology, Adaptations, and Exports: How Developing Countries Got It Right*, World Bank.

Chen, Kun, and Martin Kenney. 2005. "Universities/Research Institutes and Regional Innovation Systems: The Case of Beijing and Shenzhen." Berkeley,C.A.: Universities as Drivers of the Urban Economies in Asia 168. Available on line at http://brie.berkeley.edu/publications/wp168revised.pdf.

Cheng, Kevin (2003), *Growth and Recovery in Mongolia During Transition*, IMF Working Paper 03/217, November 2003.

Chessa, Antonio, and Marije Schouwstra (2005), *Total Factor Productivity and the Mongolian Transition*, Tinbergen Institute Discussion Paper 05-087/2, September 2005.

Crisp, N, Dick, J., and Mullins, M. (2004) *Mongolia Forestry Sector Review*, Washington, D.C.: World Bank.

Cuddington, John T., Rodney Ludema and Shamila A. Jayasuriya (2007). "Prebisch-Singer Redux." in Lederman, Daniel and William Maloney (eds.). *Natural Resources: Neither Curse nor Destiny*, World Bank and Stanford University Press: Washington, DC. 2007. pp. 103-140.

De Ferranti, D., G. Perry, D. Lederman, and W. Maloney (2002), *From Natural Resources to the Knowledge Economy: Trade and Job Quality*, World Bank Latin America and Caribbean Studies, Viewpoints, World Bank.

Doggett, Michael (1996), "The Environmental Impact of Small and Medium-Scale Mining in Bolivia, Chile, and Peru: Canadian Research Component," mimeo, Centre for Resource Studies, Queen's University, Kingston, Canada.

Easterly, William and Luis Serven (2003), *The Limits of Stabilization: Infrastructure, Public Deficits, and Growth in Latin America*. Stanford University Press and World Bank.

Education and Evaluation Center. 2006. Report on the National Assessment of Students Achievements within the "Educational Quality Assessment", draft, Ulaabataar, Mongolia.

Enoch Charles, and A.M.Gulde, D. Hardy (2002), *Banking Crises and Bank Resolution: Experiences in Some Transition Economies*, IMF Working Paper 02/56, March 2002.

Erdenechuluun, T. (2006) *Wood Supply in Mongolia: The Legal and Illegal Economies. Mongolia* Discussion Papers, East Asia and Pacific Environment and Social Development Department. Washington, D.C.: World Bank.

Evia, Jose Luis and Molina, Ramiro (1997), *Estudio Medio-ambiental de la Mineria Mediana, Pequefia y Artesanal en Bolivia*, mimeo, Universidad Cat6lica Boliviana, La Paz, Bolivia.

Favaro, E. (2005) "A Guide to Economic Growth Analysis," World Bank, Economic Policy and Debt Department, PREM, manuscript, March.

Fisher, I., (1906). The *Nature of Capital and Income*, New York: Macmillan.

Ghosh, S. and A. Kraay (2000) "Measuring growth in total factor productivity," PREM Note No. 42, Economic Policy Unit, September.

Gehlhar, M. (1998) "Bilateral transportation margins," in McDougall et al. (ed.) *Global Trade Assistance and Protection: The GTAP 4 Data Base*, Center for Global Trade Analysis, Purdue University.

Hamilton, K. 1994. "Green Adjustments to GDP." *Resources Policy* 20 (3): 155-68.

Hamilton, K., and J.M. Hartwick. 2005. "Investing Exhaustible Resource Rents and the Path of Consumption." *Canadian Journal of Economics* 38 (2): 615–21.

Hausmann, Ricardo, Dani Rodrik and Andrés Velasco (2005), *Growth Diagnostics*. John F. Kennedy School of Government, Harvard University, Cambridge, MA: Dani Rodrik, March 2005.

Hausmann, R. and D. Rodrik (2003) "Economic Development as Self-Discovery," *Journal of Development Economics* 72, December.

Ianchovichina (2006) "Are Duty Drawbacks on Exports Worth the Hassle?" *Canadian Journal of Economics* (forthcoming).

IENIM (1996), *A Mining Strategy for Latin America and the Caribbean*, World Bank Technical Paper No. 345, Industry and Mining Division, Industry and Energy Department, World Bank, Washington, D.C.

International Monetary Fund (2006a), *Mongolia: Staff Report for the 2006 Article IV Consultations*, January 2007, IMF Country Report No. 07/30. www.imf.org

International Monetary Fund (2006b), "Fiscal Policy for Growth and Development: An Interim Report", Development Committee of the Board of Governors of the World Bank an the IMF, Report No. DC2006-003. April 6, 2006.

International Monetary Fund (2005) *Mongolia: 2005 Article IV Consultation-Staff Report*, IMF Country Report No. 05/396, November 2005.

Jorge Katz, *Salmon Farming in Chile.*

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi (2007), *The Worldwide Governance Indicators Project: Answering the Critics*. World Bank Policy Research Working Paper 4149, March 2007.

Kaufmann, Daniel (2006), *Myths and Realities of Governance and Corruption*. The World Economic Forum • Global Competitiveness Report 2005-2006 • Chapter 2.1, Box 1. World Bank.

Kemple, James J., and Judith Scott-Clayton. 2004. Career Academies: Impacts on Labor Market Outcomes and Educational Attainment. New York: MDRC.

Kharas, Homi and Indermit Gill (2006). *An East Asian Renaissance: Ideas for Economic Growth.* World Bank, Washington DC.

Knack, S., and P. Keefer (1995) "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economic and Politics* 7(3): 207-27.

Krugman, Paul (1991) (cited in Chap 4, Box 4.2)

Lecraw, Donald J., Philip Eddleston, Alene Mc Mahon (2005), *A Value Chain Analysis of the Mongolian Cashmere Industry*, USAID Study under the Mongolia Economic Policy Reform and Competitiveness Project (EPRC), May 2005.

Lederman, Daniel and William Maloney (eds.) (2007). "Natural Resources: Neither Curse nor Destiny", World Bank and Stanford University Press: Washington, DC.

Lederman, Daniel and William Maloney (2007). *Neither Curse nor Destiny: Introduction to Natural Resources and Development*, in Lederman, Daniel and William Maloney (eds.). "Natural Resources: Neither Curse nor Destiny", World Bank and Stanford University Press: Washington, DC. 2007. pp. 1-14.

Maloney, William (2007). *Missed Opportunities: Innovation and Resource-based Growth in Latin America*, in Lederman, Daniel and William Maloney (eds.). *Natural Resources: Neither Curse nor Destiny*, World Bank and Stanford University Press: Washington, DC. 2007. pp. 141-182.

McMahon, Gary, Josè Luis Evia, Alberto Pascò-Font, and Josè Miguel Sànchez. (1999). *An Environemntal Study of Artisanal, Small, and Medium Mining in Bolivia, Chile and Peru*. World Bank Technical Paper No. 429.

Mongolian Information Development Association (2005), *The Mongolian Information and Communications Technology (ICT) Workforce Demand Survey, 2005*, July 2005.

Mongolian Population and Development Association. (2006). *Status and Consequences of Mongolian Citizens Working Abroad*, The Mongolian Population and Development Association, Ulaabataar, Mongolia.

Ministry of Industry and Trade (2006), *Mongolia Industrial Sector Development Strategy: Priority Sector Policy*, 2006; and supporting exhibits (processed).

Ministry of Social Welfare and Labor. 2006. *Status of the Labor and Social Welfare Assistance in 2005*, Ministry of Social Welfare and Labor, Ulaabataar, Mongolia.

Nathan Associates, *Mongolia Meats and Hides Industries Competitiveness Study – International Market Review*, July 2005, pp. 22, 38.

National Statistical Office of Mongolia (2003). *Internal Migration and Urbanization in Mongolia: Analysis based on the 2000 Census*, NSO, Ulaanbaatar, Mongolia, 2003

Otsuka, K. (2006) "Development of Industrial Clusters: East Asia Experience and New Development Strategy for Africa," paper presented at the World Bank, November.

Otto, James, Craig Andrews, Fred Cawood, Michael Doggett, Pietro Guj, Frank Stermole, John Stermole and John Tilton (eds.), (2006). *Mining Royalties: A Global Study on their Impact on Investors, Government and Civil Society*, World Bank: Washington, DC.

Pearce, D.W., and G. Atkinson. (1993). "Capital Theory and the Measurement of Sustainable Development: An Indicator of Weak Sustainability." *Ecological Economics* 8 (2): 103-108.

Rodrik, Dani (2004), *Growth Strategies*. John F. Kennedy School of Government, Harvard University, Cambridge, MA: Dani Rodrik, August 2004. pp. 1-57.

Rodrik, Dani (2005), *Why We Learn Nothing from Regressing Economic Growth on Policies.* John F. Kennedy School of Government, Harvard University, Cambridge, MA: Dani Rodrik, March 2005.

Rodrik, D. (2004) "Industrial Policy for the Twenty-first Century," manuscript, Harvard University.

Samuelson P. 1961. "The Evaluation of "Social Income"" Capital Formation and Wealth", in F. A. Lutz and D. C. Hague (eds.), *The Theory of Capital*, New York: St. Martin's Press.

Shagdarsuren O., D. Sumya, E. Gombobaatar, E. Potapov, and N. Fox. (2001) "Saker Falcon in Mongolia, Numbers and Distribution." in Banzragch, S., E. Potapov, N.C. Fox, and N.W.H. Barton (eds.) *Proceedings of the II International Conference on the Saker Falcon and Houbara Bustard*, Ulaanbaatar, Mongolia.

Sommer, Y. (2003) Urban Land Management Assessment: Ulaanbaatar. Mongolia: Second Ulanbaatar Services Improvement Project (UBSIP II).

State Street Global Advisors, *Who Holds the Wealth of Nations?* August 2005.

Tarr, D., O. Shepotylo, T. Koudoyarov (2005) "The structure of import tariffs in Russia: 2001-2003," working paper.

Townsend S. and P. Zahler (2006) "Siberian marmot survey in the Eastern Steppe of Mongolia: Evidence of a severe decline." in *Symposium of the Fifth International Conference on Genus Marmota*, Institute of Zoology, Uzbekistan Academy of Sciences.

UNCTAD/WTO (2006) *Export Potential Assessment in Mongolia*, Project MON/A1/01A Creation of Geographical Indications in Mongolia, International Trade Centre, UNCTAD/WTO.

UNDP (2004). *Report on Urban Poverty and Migration in Mongolia*, 2004.

UNIDO (2002) *Mongolia: Industrial and Trade Development Policy Review*, United National Industrial Development Organization, November.

USAID (2005), Economic Policy Reform and Competitiveness Project (EPRC), *A Value Chain Analysis of the Mongolian Cashmere Industry*, May 2005

USAID (2006), Economic Policy Reform and Competitiveness Project newsletter, various issues.

Venables, 2003. (cited in Chap 4, Box 4.2)

Wingard J.R. and P. Zahler. 2006. *Silent Steppe: The Illegal Wildlife Trade Crisis in Mongolia*. Discussion Papers, East Asia and Pacific Environment and Social Development Department. Washington D.C.: World Bank.

Woetzel, Jonathan R., *Capitalist China: Strategies for a Revolutionized Economy*, (Wiley, 2003), p. 85

World Bank (1997), *Mongolia: Country Economic Memorandum, Policies for Faster Growth,* Report no. 16749-MOG, August 1997.

World Bank (2006a), *Mongolia: Macroeconomic Brief,* Prepared for the Annual Development Partners Meeting, February 2006.

World Bank (2006b), *Mongolia: Poverty Assessment,* Report no. 356660-MN, April 2006.

World Bank (2006c), *Mongolia: Government Financial Sector Reform Program, 2000-10,* draft Mid-term Review Report, June 2006.

World Bank (2006d), *Bank Lending Rates in Mongolia*, Background paper for CEM, prepared by Hiroshi Akama, August 2006.

World Bank (2006e). *Mongolia: Promoting investment and job creation: An investment climate assessment and trade integration study*, World Bank, Washington DC.

World Bank. (2006f). *Development and Next Generation*, World Bank, Washington DC.

World Bank. (2006g). *Doing Business in 2007: How to Reform*, World Bank, Washington DC.

World Bank (2006h), *Governance, Investment Climate, and Harmonious Society: Competitiveness Enhancements for 120 Cities in China*, October 2006.

World Bank. (2006i). *Where is the Wealth of Nations? Measuring Capital in the 21st Century.* Washington DC: The World Bank.

World Bank (2006j). *Mongolia: A Review of Environmental and Social Impacts in the Mining Sector*. World Bank, Washington, D.C.

World Bank (2005). *Equity and Development*. World Development Report, World Bank: Washington, DC.

World Bank (2004). *Mongolia Environment Monitor*, World Bank, Washington DC, 2004.

World Bank (2003), *From Goats to Coats: Institutional Reform in Mongolia's Cashmere Sector*, report 26240-MOG, 19 December 2003.

World Bank (2002), *From Natural Resources to the Knowledge Economy: Trade and Job Equality*, Latin American and Caribbean Studies, 2002, pp. 38-44.

Wright, Gavin and Jesse Czelusta (2007), "Resource-based Growth Past and Present," in

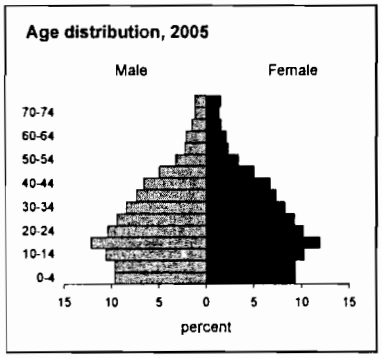
Lederman, Daniel and William Maloney (eds.). *Natural Resources: Neither Curse nor Destiny*, World Bank and Stanford University Press: Washington, DC. 2007. pp. 183-212.

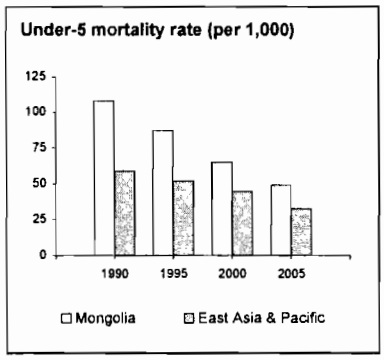
ANNEX I

Mongolia at a glance

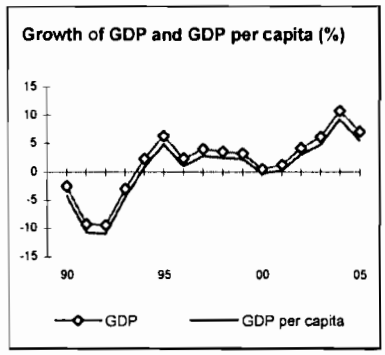
5/7/07

Key Development Indicators	Mongolia	East Asia & Pacific	Low income
(2006)			
Population, mid-year (millions)	2.6	1,885	2,352
Surface area (thousand sq. km)	1,567	16,300	29,262
Population growth (%)	1.2	0.9	1.8
Urban population (% of total population)	*57*	41	30
GNI (Atlas method, US$ billions)	*1.9*	3,073	1,377
GNI per capita (Atlas method, US$)	*720*	1,630	585
GNI per capita (PPP, international $)	*2,190*	6,060	2,470
GDP growth (%)	8.4	8.9	8.0
GDP per capita growth (%)	7.1	8.0	6.1
(most recent estimate, 2000–2006)			
Poverty headcount ratio at $1 a day (PPP, %)	11	9	..
Poverty headcount ratio at $2 a day (PPP, %)	45	37	..
Life expectancy at birth (years)	67	71	59
Infant mortality (per 1,000 live births)	39	26	75
Child malnutrition (% of children under 5)	13	15	..
Adult literacy, male (% of ages 15 and older)	98	..	..
Adult literacy, female (% of ages 15 and older)	98	..	..
Gross primary enrollment, male (% of age group)	117	115	108
Gross primary enrollment, female (% of age group)	119	113	96
Access to an improved water source (% of population)	62	79	75
Access to improved sanitation facilities (% of population)	59	51	38





Net Aid Flows	1980	1990	2000	2006 [a]
(US$ millions)				
Net ODA and official aid	2	13	217	212
Top 3 donors (in 2005)				
Japan	..	2	105	56
Germany	..	4	19	28
United States	..	..	13	18
Aid (% of GNI)	*0.1*	0.7	23.2	10.4
Aid per capita (US$)	1	6	91	83



Long-Term Economic Trends					1980–90	1990–2000	2000–06
					(average annual growth %)		
Consumer prices (annual % change)	..	*325.5*	8.1	5.9			
GDP implicit deflator (annual % change)	*2.0*	0.0	9.0	15.9			
Exchange rate (annual average, local per US$)	*3.0*	5.0	1,076.7	1,179.6			
Terms of trade index (2000 = 100)	..	..	100	110			
Population, mid-year (millions)	1.7	2.1	2.4	2.6	2.4	1.3	1.2
GDP (US$ millions)	*2,310*	2,093	941	2,689	*5.4*	1.0	6.6
		(% of GDP)					
Agriculture	*16.7*	15.2	33.8	21.1	*1.4*	2.5	2.6
Industry	*25.0*	40.6	24.0	43.9	*6.6*	-2.5	7.6
Manufacturing	..	35.6	5.4	5.3	..	*-9.7*	5.8
Services	*58.3*	44.2	42.1	34.9	*8.4*	0.7	7.9
Household final consumption expenditure	*52.3*	61.6	54.6	45.0	..	..	..
General gov't final consumption expenditure	*24.9*	29.8	18.1	14.7	..	..	..
Gross capital formation	*70.0*	35.6	44.1	36.0	..	..	..
Exports of goods and services	*23.9*	22.4	65.2	73.8	..	..	..
Imports of goods and services	*71.0*	49.4	82.0	69.5	..	..	..
Gross savings	*22.3*	6.3	36.7	49.2	..	..	..

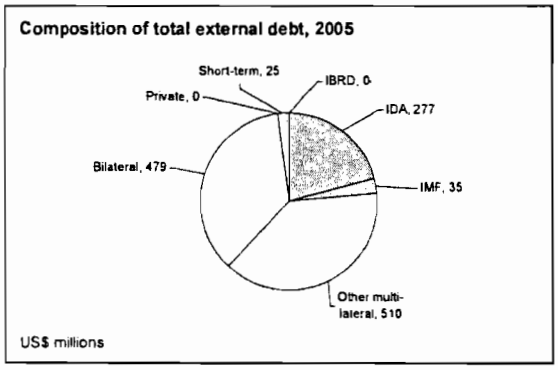
Note: Figures in italics are for years other than those specified. 2006 data are preliminary. Group data are for 2005. .. indicates data are not available
a. Aid data are for 2005.

Development Economics, Development Data Group (DECDG).

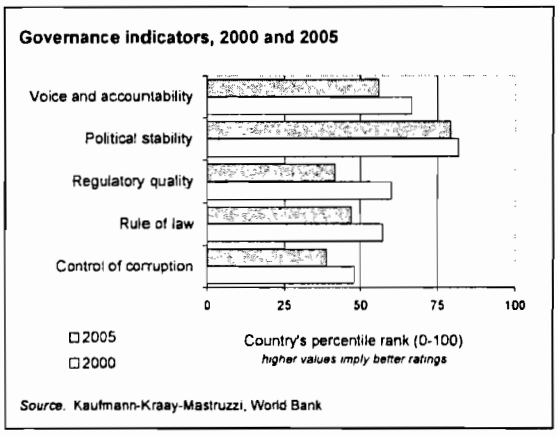
Balance of Payments and Trade	2000	2006
(US$ millions)		
Total merchandise exports (fob)	536	1,543
Total merchandise imports (cif)	676	1,486
Net trade in goods and services	-158	193
Workers' remittances and compensation of employees (receipts)	12	*202*
Current account balance	-69	459
as a % of GDP	-7.3	17.1
Reserves, including gold	141	718

Central Government Finance	2000	2005
(% of GDP)		
Revenue	..	*39.0*
Tax revenue	..	*22.3*
Expense	..	*30.4*
Cash surplus/deficit	..	*-0.5*
Highest marginal tax rate (%)		
Individual	..	..
Corporate	..	..

External Debt and Resource Flows		
(US$ millions)		
Total debt outstanding and disbursed	896	1,327
Total debt service	39	45
HIPC and MDRI debt relief (expected, flow)	–	–
Total debt (% of GDP)	95.2	63.3
Total debt service (% of exports)	6.2	2.8
Foreign direct investment (net inflows)	54	182
Portfolio equity (net inflows)	0	0



Private Sector Development	2000	2006
Time required to start a business (days)	–	20
Cost to start a business (% of GNI per capita)	–	5.1
Time required to register property (days)	–	11
Ranked as a major constraint to business (% of managers surveyed who agreed)		
Tax rates	..	*64.9*
Access to/cost of financing	..	*64.4*
Stock market capitalization (% of GDP)	3.9	*1.5*
Bank branches (per 100,000 people)	..	..



Technology and Infrastructure	2000	2005
Paved roads (% of total)	3.5	..
Fixed line and mobile phone subscribers (per 1,000 people)	113	279
High technology exports (% of manufactured exports)	0.5	0.1

Environment		
Agricultural land (% of land area)	83	*83*
Forest area (% of land area, 2000 and 2005)	6.8	6.5
Nationally protected areas (% of land area)	..	*13.9*
Freshwater resources per capita (cu. meters)	..	13,626
Freshwater withdrawal (% of internal resources)	*1.3*	..
CO2 emissions per capita (mt)	3.1	*3.2*
GDP per unit of energy use (2000 PPP $ per kg of oil equivalent)	..	..
Energy use per capita (kg of oil equivalent)	..	..

World Bank Group portfolio	2000	2005
(US$ millions)		
IBRD		
Total debt outstanding and disbursed	–	–
Disbursements	–	–
Principal repayments	–	–
Interest payments	–	–
IDA		
Total debt outstanding and disbursed	137	277
Disbursements	14	14
Total debt service	1	4
IFC *(fiscal year)*		
Total disbursed and outstanding portfolio	1	**6**
of which IFC own account	1	6
Disbursements for IFC own account	0	6
Portfolio sales, prepayments and repayments for IFC own account	0	0
MIGA		
Gross exposure	0	20
New guarantees	0	20

Note: Figures in italics are for years other than those specified. 2006 data are preliminary
.. indicates data are not available. – indicates observation is not applicable.

5/7/07

Development Economics, Development Data Group (DECDG).

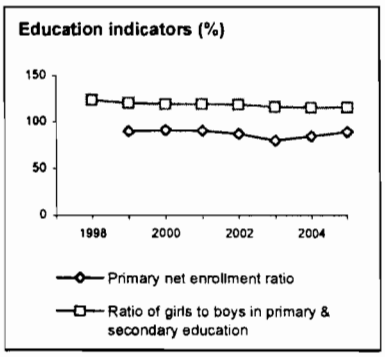
Millennium Development Goals

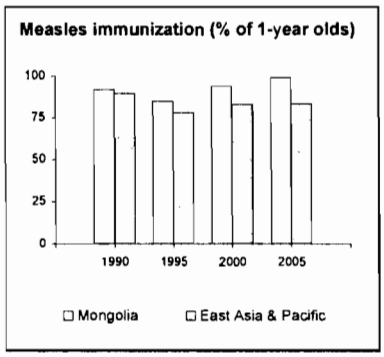
Mongolia

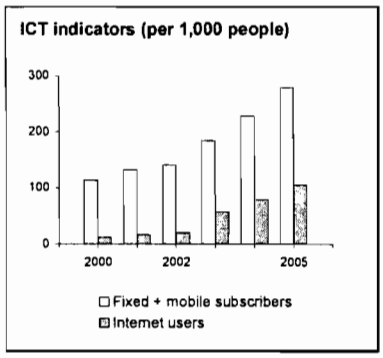
With selected targets to achieve between 1990 and 2015
(estimate closest to date shown, +/- 2 years)

Mongolia

Goal 1: halve the rates for $1 a day poverty and malnutritior	**1990**	**1995**	**2000**	**2005**
Poverty headcount ratio at $1 a day (PPP, % of population)	..	13.9	*10.8*	..
Poverty headcount ratio at national poverty line (% of population)	..	36.3	*43.1*	*36.1*
Share of income or consumption to the poorest quintile (%)	..	7.3	*7.5*	..
Prevalence of malnutrition (% of children under 5)	*12*	..	13	..
Goal 2: ensure that children are able to complete primary schooling				
Primary school enrollment (net, %)	*90*	..	91	89
Primary completion rate (% of relevant age group)	..	*76*	87	97
Secondary school enrollment (gross, %)	*82*	..	63	94
Youth literacy rate (% of people ages 15-24)	..	..	..	98
Goal 3: eliminate gender disparity in education and empower womer				
Ratio of girls to boys in primary and secondary education (%)	*113*	..	119	116
Women employed in the nonagricultural sector (% of nonagricultural employment)	44	47	49	*50*
Proportion of seats held by women in national parliament (%)	25	*8*	8	*7*
Goal 4: reduce under-5 mortality by two-thirds				
Under-5 mortality rate (per 1,000)	108	87	65	49
Infant mortality rate (per 1,000 live births)	78	64	50	39
Measles immunization (proportion of one-year olds immunized, %)	92	85	94	99
Goal 5: reduce maternal mortality by three-fourths				
Maternal mortality ratio (modeled estimate, per 100,000 live births)	..	..	110	..
Births attended by skilled health staff (% of total)	..	..	97	*97*
Goal 6: halt and begin to reverse the spread of HIV/AIDS and other major diseases				
Prevalence of HIV (% of population ages 15-49)	..	..	..	0.1
Contraceptive prevalence (% of women ages 15-49)	..	..	67	*69*
Incidence of tuberculosis (per 100,000 people)	219	209	200	191
Tuberculosis cases detected under DOTS (%)	..	7	62	82
Goal 7: halve the proportion of people without sustainable access to basic needs				
Access to an improved water source (% of population)	63	..	..	*62*
Access to improved sanitation facilities (% of population)	..	..	..	*59*
Forest area (% of total land area)	7.3	..	6.8	6.5
Nationally protected areas (% of total land area)	..	..	..	*13.9*
CO2 emissions (metric tons per capita)	4.7	3.5	3.1	*3.2*
GDP per unit of energy use (constant 2000 PPP $ per kg of oil equivalent)	..	..	..	..
Goal 8: develop a global partnership for development				
Fixed line and mobile phone subscribers (per 1,000 people)	32	34	113	279
Internet users (per 1,000 people)	0	0	13	105
Personal computers (per 1,000 people)	..	3	13	133
Youth unemployment (% of total labor force ages 15-24)	..	..	22.8	..







Note: Figures in italics are for years other than those specified. .. indicates data are not available

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Development Economics, Development Data Group (DECDG).

ANNEX II
Mongolia Growth Diagnostics

This annex provides details of the "Growth Diagnostics" approach that was applied to Mongolia to highlight the key areas that need immediate policy intervention by the Government in order to have the largest total positive impact (including hard-to-measure indirect effects) on economic growth over the next decade.

LOOKING AT THE CONSTRAINTS

The recent economic growth literature suggests that developing economies exhibit significant slack once relevant constraints are relaxed and can respond very vigorously to small-scale (and strategic) interventions in the economic environment to unleash this growth potential.[1] To design appropriate strategies, however, one needs to undertake continuous diagnosis, experimentation and evaluation. Therefore, if one's objective is to promote high, sustained, private sector-oriented growth with efficient use of all resources (public and private), as is the intention in Mongolia, one will need to address several inter-related questions, including whether the level of private investment in the country is low? Investment could be low because returns to capital are low or because the cost of finance is high. In turn, returns to capital may be low due to insufficient investment in complementary factors of production (such as infrastructure and human capital), low land productivity (perhaps, due to poor natural resource management), or low private returns to capital (perhaps, due to high taxes or high appropriability so that even if one invested it would not be translated into adequate cash flows), poor property rights, corruption, macro instability, and market failures (such as coordination externalities and adverse learning externalities that adversely effect the ability to adopt new technologies), and the like. Alternatively, the cost of finance may be high because the country has limited access to external capital markets or because of problems in the domestic financial market. A country may have difficulties accessing external capital markets for a variety of reasons including high country risk, unattractive FDI conditions, vulnerabilities in the debt maturity structure, and excessive regulations of the capital account. Inadequate or inappropriately priced local finance may be due to low domestic saving and/or poor domestic financial intermediation. Figure A2.1 summarizes this kind of "growth diagnostics" approach that we use in this report to examine the situation in Mongolia.[2]

In theory, this economic growth literature suggests that when constraints are "binding", they result in activities that are designed to get around them. Symptoms that one sees under these circumstances include: high taxes; high degree of informality in

[1] See Dani Rodrik (2004) and Dani Rodrik (2005) for a summary of the recent thinking in the Economic Growth literature.

[2] Also called a "growth diagnostic tree diagram" *a la* Hausmann, Rodrik and Velasco (2005) that is typically used to organize the thinking about the "binding constraints" to private sector growth in a country. An exercise in growth diagnostics consists of reviewing and analyzing the factors found along the branches of the growth diagnostic tree in order to ascertain which of these factors are most binding constraints to growth. Although, all factors are likely to matter for growth and welfare, the ones that are most binding are those that are likely to provide the largest positive direct effect, so that even after taking into account second-best interactions, the net impact of a policy change remains positive and sizable.

economic activities; poor legal institutions; high demand for informal mechanisms of conflict resolution and enforcement; poor financial intermediation; and internationalization of finance through business groups/connected lending operations; among others. Therefore, in applying the *growth diagnostics* method to the case of Mongolia we rely on direct and indirect evidence to identify "bottlenecks" to economic growth, and because the aggregate picture typically hides important details at the industry level, we use aggregate as well as industry and firm-level data.[3]

Is private investment in Mongolia low?

Gross domestic investment in Mongolia has been high by international standards. In the past ten years gross domestic investment in Mongolia averaged 34.5 percent of GDP (Table A2.1). *This average investment-to-GDP ratio was comparable to the average investment ratio in the East Asia region for this period. It was also much higher than the investment ratio one saw in the low income countries, on average, as well as, in the average for the group of land-locked, resource-rich countries in Central Asia.*

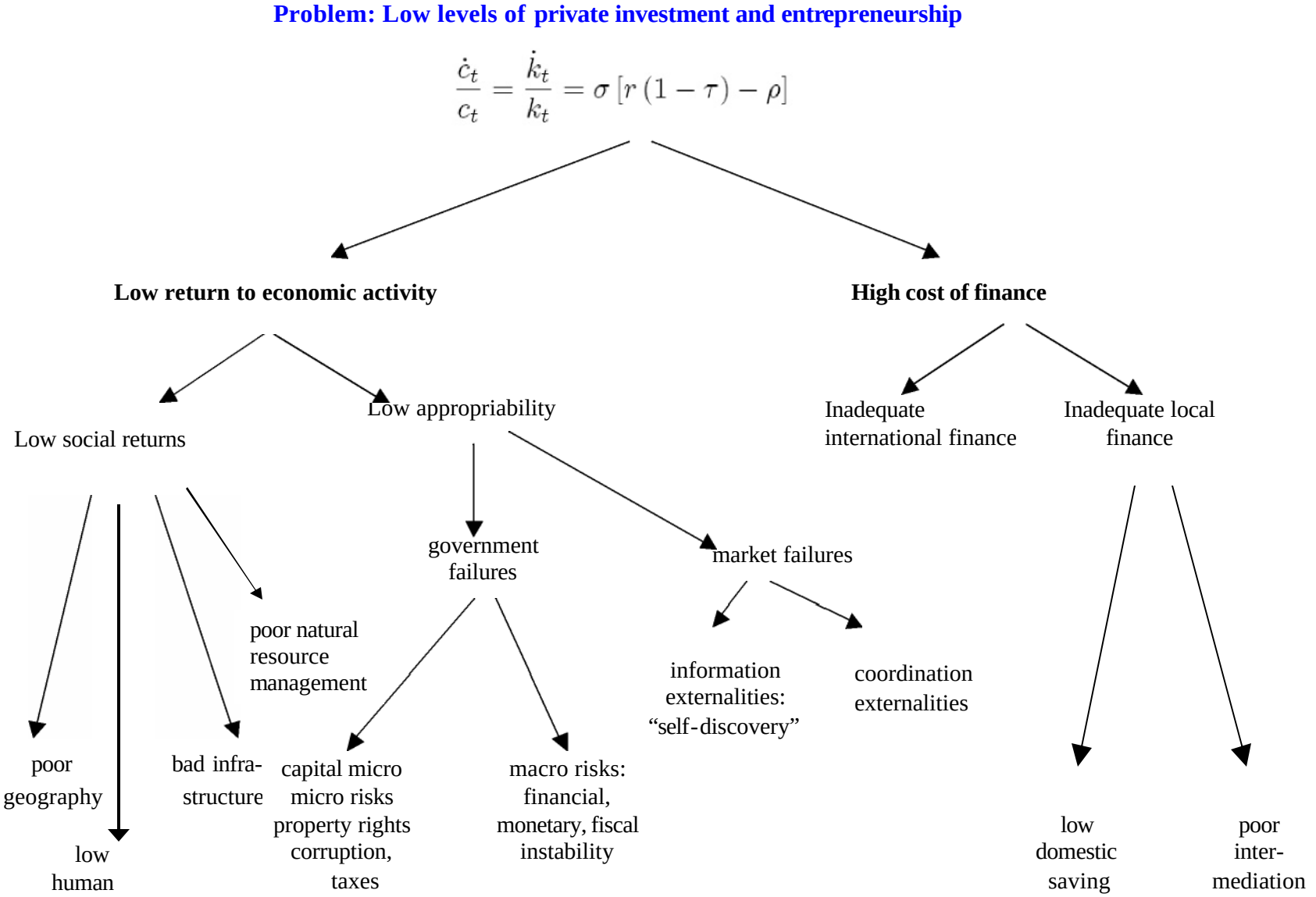
However, the majority of investment in Mongolia was funded by foreign financing, primarily foreign aid. In fact, the share of foreign aid in gross investment has averaged 60 percent over the past ten years (Table A2.1). In 2004 this share was approximately four times the share in low income countries. Domestic investment has grown slightly, but is a minor share in total investment (Figure A2.2). The small share of domestic investment implies that the economy is dependent on foreign funds which are uncertain by nature, and may decline substantially if global demand for commodities slumps.

The bulk of private investment in Mongolia went into a limited number of sectors –mining and construction, and into a very small number of firms operating in these sectors.[4] In 2004 investment in the construction and mining sectors accounted for nearly 60 percent of gross investment in Mongolia (Table A2.1). Investment in the mining sector alone accounted for 15 percent of total investment, 33 percent of investment in machinery, equipment and tools, 59 percent of private investment, and a large share of foreign investment.

[3] It should be noted that, with the exception of livestock herding, the official GDP statistics that are used here do not capture the activities of Mongolia's large and growing informal sector. In 2005, the informal sector allegedly produced output equivalent to 18 percent of GDP and employed as much as 35 percent of Mongolia's working age population (compared to 20 percent in the early nineties). Official export data also understate the importance of cashmere exports, since a large share of raw cashmere gets smuggled every year. In 2002, over 38% of the raw cashmere produced was allegedly smuggled to China (Source: World Bank, *From Goats to Coats*, 2003a)

[4] In 2004 private firms operating in mining and construction were 0.7 percent and 2.7 percent of all private firms, respectively. A large number of Mongolian private firms provided wholesale and retail trade services (40 percent), and utilities, social sector services, and public administration services (32.9 percent). Manufacturing firms represented only 5.7 percent of all private firms, private agricultural firms – 5.1 percent, hospitality firms – 3.2 percent, transport – 2.1 percent, financial real estate and business – 7.5 percent.

Figure A2.1: "Growth Diagnostics" to Identify the "Binding Constraints" to Growth.



Foreign direct investment (FDI) grew at a rapid pace in the past ten years. As a share of GDP FDI rose from 1.4 percent in 1996 to 10.4 percent in 2003 before it fell down to 5.8 percent in 2004, but recovered to 9.8 percent in 2005. The average share of FDI for the ten year period was 5.2 percent of GDP and was higher than the average of East Asia and more than three times the average of low income countries (Table A2.1). Most of foreign direct investment however was attracted by a single sector—mining.[5] The share of FDI attracted by mining rose from 46 percent of total FDI in 2001 to 68 percent of total FDI in 2005.[6]

Domestic private investment has increased in importance, but in 2004 its share in total investment was still relatively small. Only one third of the total private domestic investment was financed by bank loans (Table A2.3). Although domestic credit to the private sector has been growing at high rates,[7] the vast majority of bank loans has been short term and has financed mainly wholesale and retail trading activities, rather than investment projects.[8]

[5] Some FDI went into the service sectors, but a large portion of it was low quality investment made by individuals rather than companies (Source: Mr. Otgonbat, Vice Chairman of Foreign Investment and Foreign Trade Agency.)

[6] Foreign direct investment in mineral and petroleum exploration and development activities expanded from US$148 million in 2004 to US$191 million in 2005.

[7] According to the IMF (2005) private credit grew at a rate of more than 200 percent in 2002 and 2003, and 33 percent in 2005. In 2005 domestic credit to the private sector was close to 40 percent of GDP - higher than domestic credit to the private sector in low income countries, but lower than domestic credit in Vietnam, and the average for the middle and high income countries.

[8] Source: World Bank (2006b) and Fitch Ratings (2006).

Table A2.1: Cross-country Comparison of Saving and Investment Indicators, 1996-2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	1996-2000 Average
Foreign savings in Mongolia	3.1	-9.8	7.7	5.7	7.4	6.1	9.4	7.2	-3.9	0.3	3.3
National Savings in Mongolia	26.8	37.9	27.5	31.3	28.8	30.0	22.8	30.8	40.4	35.2	31.1
Gross capital formation (% of GDP)											
Mongolia	29.9	28.1	35.2	37.0	36.2	36.1	32.2	38.0	36.5	35.5	34.5
Cambodia	14.5	14.8	11.7	17.4	16.9	18.7	20.1	25.2	25.8	..	18.3
Vietnam	28.1	28.3	29.0	27.6	29.6	31.2	33.2	35.4	35.6	..	30.9
Azerbaijan	29.0	34.2	33.4	26.5	20.7	20.7	34.6	53.2	53.5	..	34.0
Kazakhstan	16.1	15.6	15.8	17.8	18.1	26.9	27.3	25.7	26.3	27.5	21.7
Kyrgyz Rep.	25.2	21.7	15.4	18.0	20.0	18.0	17.6	11.8	13.8	20.4	18.2
Uzbekistan	29.2	21.7	20.2	17.5	16.3	19.6	20.3	20.2	24.5	25.1	21.5
Ghana	21.2	24.8	23.1	20.9	24.0	26.6	19.8	22.9	27.9	29.6	24.1
Uruguay	15.2	15.2	15.9	15.1	14.0	13.8	11.5	13.1	13.3	..	14.1
East Asia and Pacific	36.5	34.8	30.8	29.5	29.9	30.8	31.5	33.1	34.4	..	32.4
Low Income Countries	20.9	21.1	20.8	21.9	21.3	21.5	21.9	22.3	23.0	..	21.6
Foreign aid (% of gross capital formation)											
Mongolia	56.9	84.9	59.5	66.4	63.5	57.8	57.1	51.4	44.3	..	60.2
Cambodia	82.9	65.8	92.4	45.2	64.6	59.3	59.2	46.5	38.0	..	61.5
Vietnam	13.6	13.1	14.9	18.0	18.2	14.2	11.0	12.6	11.4	..	14.1
Azerbaijan	10.5	13.6	8.1	14.0	12.8	19.7	16.2	7.8	3.8	..	11.8
Kazakhstan	3.7	4.1	6.4	5.8	5.7	2.5	2.8	3.4	2.3	..	4.1
Kyrgyz Rep.	50.1	62.5	94.2	125.8	78.4	69.0	65.8	88.1	84.9	..	79.9
Uzbekistan	2.2	4.4	5.2	5.2	8.3	6.9	9.6	9.5	8.3	..	6.6
Ghana	44.3	28.9	40.7	37.9	50.3	45.6	53.3	54.7	54.9	..	45.6
Uruguay	1.1	1.0	0.7	0.7	0.6	0.6	0.9	1.1	1.3	..	0.9
East Asia and Pacific	1.5	1.3	1.9	2.1	1.7	1.3	1.1	0.9	0.7	..	1.4
Low Income Countries	14.6	12.1	12.8	10.9	11.0	11.9	13.4	13.3	11.9	..	12.4
FDI (% of GDP)											
Mongolia	1.4	2.4	2.0	3.3	5.7	4.2	7.0	10.4	5.8	9.8	5.2
Cambodia	8.4	5.9	7.8	6.6	4.0	3.9	3.6	1.9	2.7	..	5.0
Vietnam	9.7	8.3	6.1	4.9	4.2	4.0	4.0	3.7	3.6	..	5.4
Azerbaijan	19.7	28.1	23.0	11.1	2.5	4.0	22.3	45.1	41.0	..	21.9
Kazakhstan	5.4	6.0	5.2	9.4	7.0	12.8	10.5	6.8	9.5	..	8.1
Kyrgyz Rep.	2.6	4.7	6.6	3.6	-0.2	0.3	0.3	2.4	3.5	..	2.6
Uzbekistan	0.6	1.1	0.9	0.7	0.5	0.7	0.7	0.7	1.2	..	0.8
Ghana	1.7	1.2	2.2	3.2	3.3	1.7	1.0	1.8	1.6	..	2.0
Uruguay	0.7	0.6	0.7	1.1	1.3	1.5	1.4	3.7	2.4	..	1.5
East Asia and Pacific	3.9	4.0	4.1	3.3	2.6	2.7	2.9	2.6	2.5	..	3.2
Low Income Countries	1.3	1.5	1.3	1.2	1.3	1.5	1.6	1.4	1.4	..	1.4

Source: World Bank (SIMA)

Table A2.2: Composition of Total Investment, 2001-04

(percentage share of total investment)

	2001	2002	2003	2004
Construction	29.3	34.9	40.6	41.9
Machinery, equipment and tools	44.9	50.6	49.1	46.3
o/w mining	14.8	11.2	9.1	15.4
Others	25.8	14.5	10.3	11.8

Source: Mongolian Statistical Yearbook (2004).

Table A2.3: Domestic Investment in Mongolia, 2001-2004

Investment	2001	2002	2003	2004
Government (% of domestic investment)	38.0	37.2	36.1	35.5
Private domestic (% of domestic investment)	62.0	62.8	63.9	64.5
Private domestic (% of investment)	21.6	22.7	23.3	26.4
Bank loans (% of private domestic investment)	16.5	30.3	30.6	31.9
Own funds (% of private domestic investment)	83.5	69.7	69.4	68.1
Bank loans (% of investment)	3.6	6.9	7.1	8.4

Source: Mongolian Statistical Yearbook (2004).

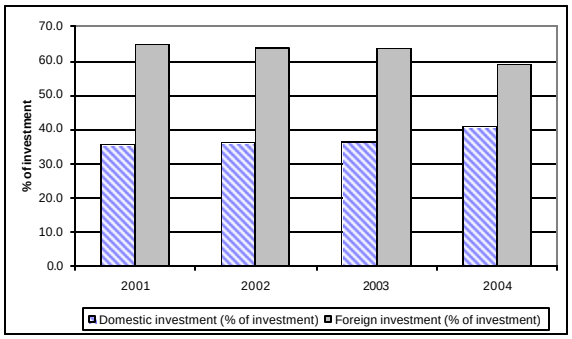
Hence, the question that follows from this is whether private investment outside the mining and construction sectors has been low because of high cost of capital or due to low rates of return. This is critical if one needs to ensure that Mongolia's future growth and employment generation is broad-based.

Is the cost of capital in Mongolia high?

Real interest rates in Mongolia are high, but they have come down substantially since the late nineties (Figure A2.3). Although nominal deposit rates remained stable and high in the period 2001-2005, real lending rates came down from 30 percent in 2001 to 11 percent in 2005.[9] This drop in the real cost of capital was due mostly to a rise in the inflation rate, rather than a decline in the risk premium (Figure A2.4). In the absence of any changes to the deposit rate and the risk premium, a drop in inflation from 13 percent in 2005[10] to 4.5 percent in 2006 is likely to reverse the decline in the real lending rate and result in an increase in the real cost of capital above 15 percent. Indeed, real deposit and lending rates have risen significantly even when inflation has declined recently. (Figure A2.5).

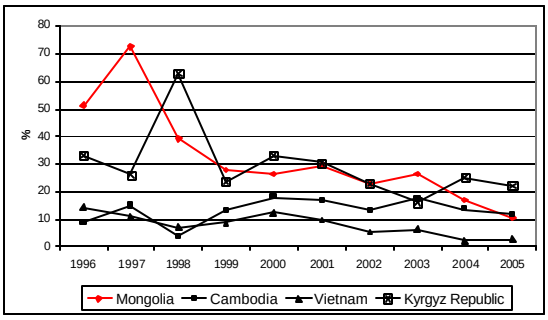
[9] The real lending rate is defined as the rate charged on loans to prime customers on loans of any maturity.
[10] In 2005 inflationary pressures in Mongolia were much higher than those in comparator countries such as Vietnam, Cambodia, Kazakhstan, Kyrgyz Rep., and Uruguay.

Figure A2.2: Domestic investment is on the rise in Mongolia…



Source: Mongolian Statistical Yearbook (2004).

Figure A2.3: as the cost of capital declines.



Source: World Bank (SIMA).

Figure A2.4: Real cost of capital has declined primarily due to increase in the inflation rate rather than declines in the risk premium.

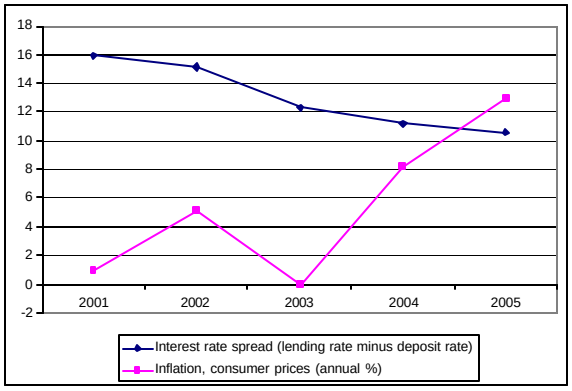


Figure A2.5: Cost of capital is high because of high deposit interest rates and risk premiums.

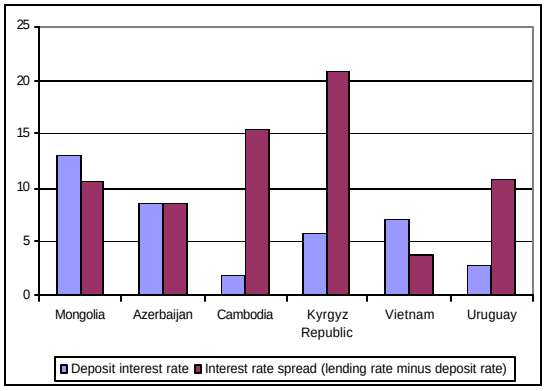


Table A2.4: Interest Rate Spreads (lending minus deposit rate), 1996-2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Mongolia	43.2	45.7	19.3	15.9	15.9	15.9	15.2	12.3	11.2	10.6
Cambodia	10.0	10.4	10.5	10.2	10.5	12.1	13.7	16.5	15.8	15.4
Vietnam	20.1	5.9	5.2	5.3	6.9	4.1	2.6	2.9	..	3.9
Azerbaijan	..	..	..	7.4	6.8	11.2	8.7	5.9	6.5	8.5
Kyrgyz republic	28.3	9.8	37.7	25.3	33.5	24.8	18.9	14.1	22.6	20.8
Uruguay	43.5	37.6	31.6	28.5	27.8	27.0	55.8	29.3	17.5	10.8
East Asia & Pacific	6.1	6.2	5.6	5.9	6.9	5.9	5.9	5.9	6.3	5.5
Low income countries	11.5	10.6	12.7	12.7	12.9	13.7	13.0	12.4	11.9	11.0
Low & middle income	8.7	8.4	9.3	8.3	8.4	8.3	8.6	8.2	7.4	7.3
Middle income countries	7.6	7.4	7.7	7.5	7.6	7.6	7.2	7.1	6.5	6.5
High income countries	3.9	3.5	3.8	3.9	4.1	4.1	4.1	..	..	..
World	7.2	7.0	7.6	7.1	7.4	7.1	7.2	7.1	6.5	6.5

Source: World Bank
Note: Data for Kazakhstan, Uzbekistan and Ghana were not available.

The reasons for the high cost of capital in Mongolia cannot be traced to inadequate or expensive international finance. Mongolia's official debt is primarily

concessional, long-term debt. The share of concessional debt in total external debt averaged 85 percent over the past ten years, and is much higher than the average for low income countries (51 percent) and East Asia (20 percent) (Table A2.5). Mongolia continues to have little trouble obtaining concessional finance as the levels of these external inflows have remained relatively stable over the past decade. In December 2005, concessional loan agreements have been entered into with China (US$300 million), and South Korea, among others. Significant additional grant financing over the next few years from the U.S. Millennium Challenge Corporation (MCC) is also being negotiated.

Table A2.5: External Finance in Mongolia is not Costly

	1996	1997	1998	1999	2000	2001	2002	2003	2004	Period Average
External debt (% of GNI)										
Mongolia	45.8	58.3	74.7	102.4	96.0	87.2	93.1	116.6	94.7	85.4
Cambodia	68.9	70.2	80.5	73.5	74.4	73.9	74.1	75.3	72.5	73.7
Vietnam	108.2	82.6	84.1	82.0	41.7	39.0	38.7	40.6	40.1	61.9
Azerbaijan	14.1	12.9	16.0	23.7	27.2	24.2	25.6	25.5	25.4	21.6
Kazakhstan	14.0	18.7	27.9	37.5	72.5	70.8	73.3	78.2	85.1	53.1
Kyrgyz republic	63.6	78.7	96.1	147.7	142.1	117.5	119.5	109.2	99.3	108.2
Uzbekistan	17.1	19.9	22.5	29.1	34.1	43.4	50.1	50.1	42.0	34.3
Ghana	85.3	84.6	86.2	85.1	126.6	121.9	115.4	101.2	80.0	98.5
Uruguay	29.4	31.1	34.8	35.8	40.0	53.2	87.3	106.4	97.7	57.3
East Asia & Pacific	33.4	34.3	38.4	35.3	29.7	28.9	25.9	24.0	22.5	30.3
Low income countries	53.2	48.8	51.1	48.0	44.8	41.7	41.4	39.4	35.6	44.9
Concessional debt (% of total external debt)										
Mongolia	76.2	81.7	87.0	89.6	91.2	91.5	90.3	76.3	85.2	85.4
Cambodia	90.8	90.5	90.5	90.2	88.2	88.4	88.9	89.3	89.0	89.5
Vietnam	75.8	15.3	20.0	24.0	61.3	66.4	72.4	73.9	71.4	53.4
Azerbaijan	14.7	23.2	23.3	28.3	29.4	35.4	46.1	53.8	57.7	34.7
Kazakhstan	4.4	4.1	4.4	6.5	3.3	2.6	2.9	3.3	3.0	3.8
Kyrgyz republic	32.3	34.6	41.9	46.1	48.2	56.6	62.5	68.0	74.5	51.6
Uzbekistan	25.9	27.1	28.7	26.6	30.4	30.1	32.7	35.6	37.6	30.5
Ghana	62.9	65.7	68.1	70.7	73.3	70.4	71.7	75.0	74.3	70.2
Uruguay	3.6	3.5	3.2	3.3	2.6	2.1	1.7	1.5	1.4	2.6
East Asia & Pacific	19.2	14.1	17.7	20.0	20.9	19.3	21.2	22.3	22.1	19.6
Low income countries	49.4	45.8	47.5	49.4	49.0	50.2	52.9	56.9	56.4	50.8
Short-term debt (% of total external debt)										
Mongolia	0.9	4.2	3.9	2.4	1.4	1.6	4.3	19.4	11.0	5.4
Cambodia	4.5	5.2	5.5	6.0	8.6	8.3	7.5	7.1	7.8	6.7
Vietnam	14.3	10.8	9.8	10.2	7.2	6.2	5.9	8.1	12.0	9.4
Azerbaijan	3.5	0.8	0.2	2.7	11.6	7.9	5.5	5.9	6.9	5.0
Kazakhstan	7.6	8.6	7.0	7.7	7.7	9.0	10.7	12.5	11.1	9.1
Kyrgyz republic	0.8	2.5	1.9	3.5	7.1	2.8	1.0	1.9	0.4	2.4
Uzbekistan	3.8	14.5	4.4	12.7	6.1	10.4	6.9	4.4	3.6	7.4
Ghana	11.2	11.7	11.3	11.0	9.4	8.7	8.5	9.2	10.0	10.1
Uruguay	28.2	28.5	26.5	24.0	23.5	30.3	15.1	12.6	16.0	22.7
East Asia & Pacific	26.1	25.1	15.9	13.5	12.6	20.5	22.7	26.0	29.7	21.3
Low income countries	11.8	10.7	10.0	10.0	8.0	7.8	7.5	7.6	8.5	9.1

Source: World Bank (SIMA); Data for 2005 were not available.

Inward FDI was high in Mongolia (at 9.8 percent of GDP, compared with the median of only 1.7 percent for Fitch's 'B' rated countries).[11] Rising official reserves and commercial bank assets helped push the 2006 liquidity ratio to over 600 percent (notably higher than the comparable Fitch's 'B' country group median of 170 percent). It explains why Mongolia is rated more favorably than its 'B' peer group.

Looking at the cost and access to domestic financing, domestic savings have fluctuated a lot during the past decade, but on a trend basis has increased substantially in the past few years. As a share of GDP, domestic saving fell from 19 percent in 2001 to 11 percent a year later,[12] but increased to 25 percent in 2004, and rose again slightly thereafter (Table A2.6). Although low compared to saving in East Asian countries, the average ratio of domestic saving to GDP in Mongolia for the period 1996-2005 (22 percent) is higher than the average for low income countries with comparable interest spreads between deposit and lending rates (Tables A2.4 and A2.6).

Table A2.6: Gross Domestic Savings

(% of GDP)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Period Average
Mongolia	22	34	22	23	21	19	11	18	25	26	22
Cambodia	-4	3	-1	4	5	11	12	16	15	..	7
Vietnam	17	20	22	25	27	29	29	27	28	..	25
Azerbaijan	3	10	2	13	21	24	27	30	30	..	18
Kazakhstan	15	13	11	20	26	26	27	31	35	37	24
Kyrgyz republic	-1	14	-6	3	14	18	14	5	4	0	7
Uzbekistan	23	19	20	17	19	20	22	27	32	33	23
Ghana	13	4	10	3	5	7	8	11	8	11	8
Uruguay	15	15	15	14	12	12	13	15	15	..	14
East Asia & Pacific	37	37	36	34	34	34	35	37	38	..	36
Low income countries	18	18	17	18	20	20	20	20	20	..	19

Source: World Bank

This increase in domestic saving has been due to the strong GDP growth and balance of payments position of Mongolia over the past few years. This, in turn, has been due to favorable terms of trade, new mining operations, strong tourism revenues, remittances from abroad, and robust capital flows in the mining sector.[13] Indeed, receipts from remittances have grown significantly since 1997 (when no remittance receipts were recorded) to a peak of US$195 million in 2004. But in 2005 remittances' growth was negative for the first time since 1997. This was allegedly due to the closure of illegal representative offices of Mongolian banks in South Korea.[14] The sharp drop in

[11] Insurers in the Fitch's 'B' peer group are viewed as weak with a poor capacity to meet policyholder and contract obligations.

[12] The fall in domestic saving in 2002 reflected the shock of bad weather to agriculture.

[13] Remittances and proceeds from businesses contributed 30-40 percent of growth in deposits in 2005, according to data from BOM.

[14] GoM has approached the South Korean government for banking licenses to enable the Mongolian commercial banks to operate branches in S. Korea, and discussions are underway.

Mongolia's exports of textiles and apparel has a modest net external effect due to the fact that garments were manufactured mostly using imported inputs.[15] Meanwhile, in 2005, there was excess liquidity in the banking system.[16]

The analysis suggests that it is not low domestic saving, but poor financial intermediation that has been primarily responsible for the high cost of capital in Mongolia. The Work Bank's recent investment climate report[17] provides compelling evidence that, with the possible exception of the wholesale and retail trade sector,[18] the degree of bank-based financial intermediation in business activity, even though improving is still very low in Mongolia.[19]

Bank deposit rates remain high compared to other emerging countries due to intensive competition among financial institutions in Mongolia. Such competition has exerted an upward pressure on bank deposit rates, and in turn, commercial bank lending rates. In spite of ample liquidity in the banking system, banks—motivated, by the desire to expand their market shares—remain aggressive in attracting depositors by offering high deposit rates, and compressing their interest margins.[20] In fact, the average returns on commercial bank assets have declined from around 4 percent in 2002 to only 1.4 percent in 2005. In an attempt to consolidate the banking sector, the Bank of Mongolia stipulated an increase in the minimum paid-up capital requirement for commercial banks in Mongolia (from MNT 4 billion to MNT 8 billion). This attempt seemed to have failed since the vast majority of existing banks (16 out of 17) met this new threshold quickly without having to close down or merge with other banks.

The spreads between deposit and lending rates are also high compared to other countries. This is largely due to the difficulty banks have in assessing credit risk. In addition, the profitability of bank's non-lending assets remains low since their operating costs and required reserve ratio are high by international standards. According to firm findings of the Mongolia's Investment Climate Report (World Bank 2006b), the difficulty in assessing credit risk derives from a number of sources. The most important being poor corporate governance, and the lack of transparency in business operations, which makes it difficult for potential lenders to assess borrowers' creditworthiness.[21] The weakness of the bankruptcy and debt recovery framework in Mongolia has translated

[15] The lifting of quotas on exports of textiles and apparel from China in 2005 had a negative effect on Mongolia's textile industry as many foreign-owned companies left Mongolia and relocated in China.

[16] Donor assistance and foreign direct investment flows helped to build up again Mongolia's official reserves which were depleted by the large payments related to the Russian debt settlement at the end of 2003.

[17] World Bank (2006b)

[18] The wholesale and retail sector was not covered by the Productivity and Investment Climate Survey (2004), which was the basis for the investment climate report. Also not covered by the survey are firms that failed and startups that did not make it.

[19] The degree of bank-based financial intermediation has increased in 2005 as the M2/GDP ratio rose to 52 percent from47 percent in 2004 and credit expanded at the highest pace since 1996.

[20] In 2005 the Central Bank reduced the coupon rate on its bonds and augmented liquidity in the banking system (World Bank 2006d).

[21] Mongolia was not rated in the *Doing Business* database on the three dimensions of investor protection, namely: transparency of transactions (extent of disclosure index), liability for self-dealing (extent of director liability index), shareholders' ability to sue officers and directors for misconduct.

itself to increased risks and costs of banking business. Data shows that bankruptcy claimants recover only 17 percent of total claims from insolvent firms in Mongolia, on average, compared to 24 percent for East Asia as a group, and 73.8 percent for OECD countries. In response, banks in Mongolia have been forced to rely entirely on collateralized lending and need to change high risk premiums on their loans to small businesses and individuals.[22] Cheap financing is only made available to a very few prime customers—typically big companies. For instance, whereas large firms can obtain financing for as little as 9.6 percent per year, the annual nominal cost of micro finance can be as high as 72 percent on short term loans to individuals or small firms (Table A2.7).

Table A2.7: Banks Provide Favorable Lending Interest Rates to a Handful of its Best Customers

(annual percentage rate on loans extended by banks in Mongolia)

	2003-III		2004-III		2005-III	
	Average	**Low, high**	**Average**	**Low, high**	**Average**	**Low, high**
Up to 1 year	41.5	11.0-72.0	39.0	6.0-72.0	42.0	12.0-72.0
1 to 5 years	37.8	9.6-66.0	37.8	9.6-60.0	57.6	9.6-48.0
5 and more years	33.3	7.8-58.8	17.8	12.0-23.5	17.8	12.0-23.5
Industrial use	39.9	7.8-72.0	36.0	18.0-54.0	29.5	11.0-48.0
Non-industrial use	40.8	9.6-72.0	24.0	6.0-42.0	27.0	6.0-48.0

Source: Bank of Mongolia

Access to capital in Mongolia has been limited for the majority of firms. Capital markets are underdeveloped and banks offer a limited range of products to firms[23] so bank loans are the primary option for raising capital from domestic sources.[24] Unlike firms in China and Malaysia, most Mongolian firms have relied largely on finance from informal sources for their investment and working capital needs. In 2004, only 6 percent of new investment was financed by commercial bank loans, compared to the average for East Asia (17 percent). In the same year, less than a third of the firms in Mongolia had a commercial bank loan, and of those only 3 percent had loans with maturities of more than 5 years (Figure 2.6).[25] Without such credit, potential productivity-enhancing investments in plants, machinery, technology upgrading of processes are difficult to undertake on a sustained basis, thereby inhibiting a firm's capabilities to scale up existing operations or improve product quality.

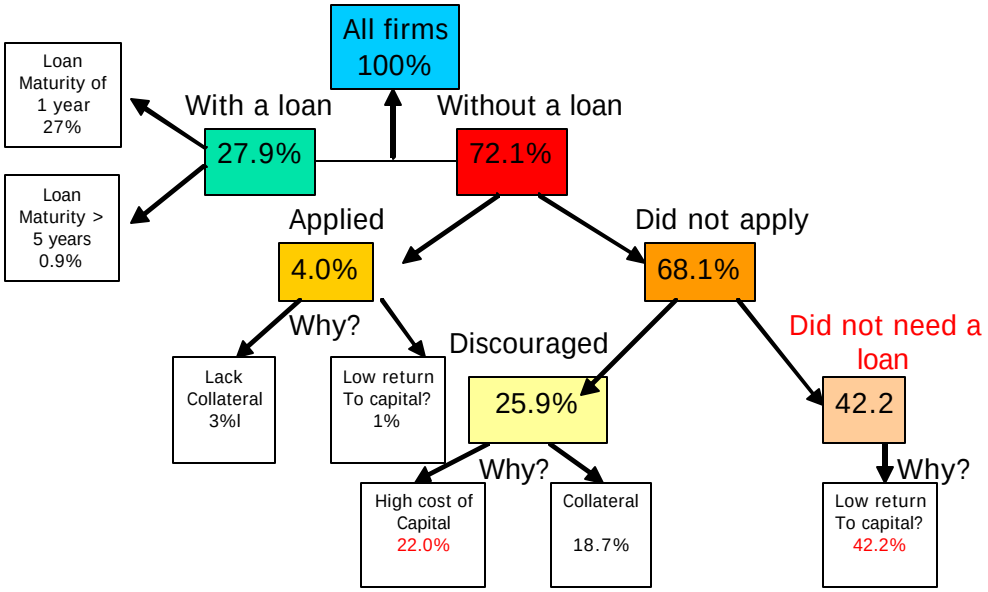
[22] According to the Doing Business database, the degree to which collateral and bankruptcy laws in Mongolia facilitate lending are comparable to those in East Asia and Central Asia. Mongolia scores higher than East Asia and Central Asia in terms of rules affecting the scope, access and quality of credit information and the public credit registry coverage.

[23] Financing through leasing arrangements is practically non-existent in Mongolia.

[24] Mongolia's financial system is dominated by commercial banks. The stock market is small and illiquid, insurance companies and pension funds are small, and a commercial bond market has yet to be developed (World Bank 1997).

[25] World Bank (2006b)

Figure A2.6: While the cost of capital is high, it is not the primary reason for the small number of firms with access to credit in Mongolia



Source: Mongolia Productivity and Investment Climate Survey (PICS) 2004.

The high collateral requirements have also limited access to credit. Collateral-to-loan values are higher in Mongolia than in any other country in East and Central Asia. The ratio of collateral required to loan value is 224 percent in Mongolia compared to the average for East Asia (78 percent), and Europe and Central Asia (154 percent). Moreover, many people, especially in rural areas, do not have access to the collateral required by banks in the form of immovable assets (land or buildings) since the pastureland is not privately-owned.[26] Land ownership in urban and peri-urban (or "Ger areas" as they are called around Ulaanbataar) areas is allowed in Mongolia in the form of long-term possession rights (up to 60 years with a possible one time extension of up to 40 years). However, transfer of possession rights is constrained by the need for permission from the relevant authorities. The rules and regulations for this are, however, not yet well established or published. This leads to lack of transparency in land allocation decisions in the urban and peri-urban (Ger) areas.[27]

While the cost of capital is high and access to capital, especially long term financing, is limited, most of the firms that needed a loan got it. According to the 2004 Productivity and Investment Survey (PICS) 56 percent of the firms in the complained that the cost of capital was a severe obstacle to business growth, but only 22 percent of the firms in the survey were discouraged and did not apply for a loan because of the high cost of capital (Figure A2.6).[28] Similarly, the survey results on access to capital suggest that

[26] World Bank (2003a)
[27] Source: Sommer (2003).
[28] Of those that were discouraged the main reason they gave for not applying was the high cost of capital (82.8 percent or 22 percent of all survey respondents), but they also gave additional reasons which included

while 42 percent of firms claimed that access to credit was a severe obstacle, 70 percent of the firms either obtained a loan (28 percent of firms) or did not need a loan (42 percent of the firms) (Figure A2.6). (See also Table A2.8).

Table A2.8: Selected Parameters on the Quality of the Business Environment, 2006

	Min. capital to start a firm (% of GNI per capita)	Recovery rate in the case of bankruptcy (cents on the $)	Documents for export Number	Time for export Days	Cost to export (US$ per container)
Mongolia	140.2	17.0	11	66	3007
Cambodia	66.2	0.0	8	36	736
Vietnam	0.0	18.0	6	35	701
Azerbaijan	0.0	32.5	7	69	2275
Kazakhstan	26.6	20.0	14	24	720
Kyrgyz republic	0.6	19.8	..	..	..
Uzbekistan	24.7	18.7	10	44	2550
Ghana	23.2	24.7	5	21	822
Uruguay	183.3	43.2	9	22	552
East Asia & Pacific	109.2	24.0	6.9	23.9	885
Europe & Central Asia	49.1	29.8	7.4	29.2	1450
L. America & Caribbean	24.1	28.2	7.3	22.2	1068
Middle East & N. Africa	859.3	28.8	7.1	27.1	923
OECD	41.0	73.8	4.8	10.5	811
South Asia	0.8	19.7	8.1	34.4	1236
Sub-Saharan Africa	297.2	16.1	8.2	40.0	1561

Source: Doing Business Survey, World Bank (2006a)

The question then is: what is the reason for few investments in the non-mining-related sectors in Mongolia along with a large number of firms not wanting to borrow from the commercial banks to finance such investment? One avenue that was examined in this study was to see whether it was a lack of profitable investment opportunities in the non-mining related sectors in Mongolia, rather than high cost of capital.

Are returns to private sector investment in non-mining-related activities low?

One way to assess overall return to economic activity in Mongolia is to estimate rates of growth of *total factor productivity* (TFP) in the past few years.[29] Data suggests

stringent collateral requirements (72 percent), cumbersome application procedures (59 percents), and perceived corruption in the allocation of credit (15 percent).

[29] Notice that TFP growth is difficult to estimate. Small differences in assumptions can lead to very different estimate of TFP growth and growth in TFP reflect factors other than pure technical change such as increasing returns to scale, markups due to imperfect competition, and sectoral reallocations. The growth accounting method for estimating TFP growth is discussed in Ghosh and Kraay (2000) and was used in

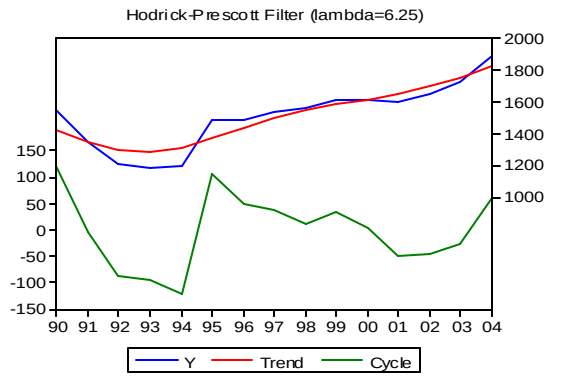
that, despite the sharp decline in incomes in the first years after transition, trend growth in per capita real incomes has been positive (Figure A2.7) and real, annual per capita GDP growth averaged 3.9 percent in the period 1993-2004.[30] Also, TFP growth has improved in recent years, and in 2004 productivity rose by nearly 5 percent (Figure A2.7). The result that productivity growth was positive in 2004 holds under all plausible sensitivity scenarios examined here (Table A2.9).[31]

Table A2.9: Sensitivity Analysis on TFP Growth in 2004

TFP Growth Estimates in 2004 (%)(Cobb-Douglas)			
	a=0.3	a=0.4	? =0.5
?=1 (CRTS)	5.8	5.2	4.5
?=1.2 (IRTS)	5.0	4.2	3.4
?=0.8 (DRTS)	6.7	6.2	5.7
TFP Growth Estimates in 2004 (%)(CRTS CES)			
	s=0.8	s=1	S=1.2
? =0.5	7.1	4.5	2.6

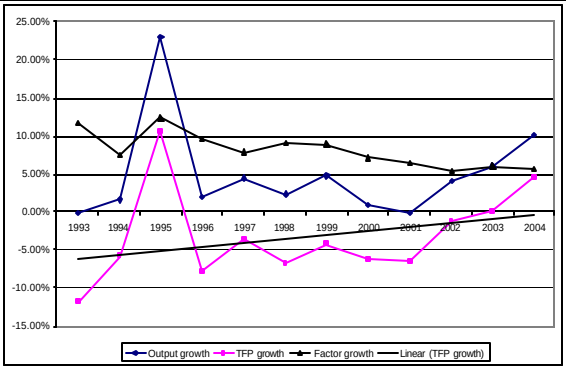
Source: World Bank Staff estimates
Note: Growth rates are in log form.

Figure A2.7: Real Per Capita GDP (in PPP Terms) has been Growing over the Past Decade



Data source: World Bank, SIMA.
Note: Difference between per capita GNI and GDP are negligible, therefore we show analysis based on GDP data .

Figure A2.8: Growth Accounting: Mongolia since Transition



Source: World Bank Staff estimates based on the following assumptions: Cobb-Douglas production function with CRTS (?=1) and capital share a=0.5.

Although the aggregate indicators suggest that Mongolia used capital efficiently, not all sectors enjoyed high returns to capital. A number of sectors seemed to lag behind the better performing ones in the past 2 years, and in two sectors—manufacturing and transport—returns to capital were not only low, they were negative (Table A2.10).

Korea Economic Report (World Bank 1999). The method relies on data from the Government of Mongolia, the World Bank and IMF. Appendix 2 presents details on the data and the methodology.

[30] The transitional recession covered the period 1991-1994. The slowdown in 2001 and 2002 was related to bad weather conditions which led to severe decline of farm output.

[31] See also Favaro (2005) where the author uses cross-country growth regressions to show that countries with higher investment shares tend to grow at higher per capita growth rates.

Table A2.10: Industries' Contribution to Real Growth in Mongolia
(percentage points)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Agriculture	1.2	1.6	2.5	1.7	-6.2	-6.2	-3.5	1.1	4.1	1.9
Industry	-1.7	-0.9	0.9	0.0	-0.2	3.7	0.4	1.6	4.0	-0.1
Manufacturing	-2.4	-1.4	0.3	-0.5	-0.4	2.2	1.2	0.7	-0.1	-2.2
Mining	0.6	0.6	0.6	0.5	0.6	1.2	-1.2	-0.3	4.1	1.7
Construction	0.1	-0.1	0.0	0.0	-0.4	0.3	0.4	1.2	0.0	0.4
Services	1.6	3.2	-0.1	-0.1	3.4	1.5	6.0	3.1	1.5	4.3
Utilities	-0.8	-0.1	0.1	0.1	0.2	0.4	0.2	0.0	0.1	0.1
Transport	0.5	0.0	0.6	0.0	1.2	1.4	2.0	1.5	1.8	-0.3
Trade	0.3	3.2	-1.2	-1.6	1.3	0.1	2.7	1.4	-0.7	4.3
Other services	1.6	0.1	0.4	1.4	0.7	-0.3	1.1	0.2	0.3	0.3

Source: Staff estimates based on data from World Bank (LDB)

Mongolia's structure of production has evolved in a way that has increased its dependence on ores and metals (Table A2.11).[32] The share of primary commodities in total merchandise exports grew from 75 percent in 1991 to 87 percent in 2005, while the share of manufactured exports dropped from 25 percent to 13 percent (Table A2.11). At the same time the nonmetal manufacturing base has narrowed considerably, and consists mainly of textiles and apparel.

Table A2.11: Industry Composition of Total Value Added in Mongolia at Constant, Producer Prices
(factor cost)

Shares	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Agriculture	36.4	36.6	37.8	38.8	33.6	27.7	23.6	23.4	25.1	25.5
Industry	22.1	20.4	20.6	20.3	20.8	24.7	24.3	24.5	26.1	24.4
Manufacturing	7.8	6.1	6.3	5.6	5.4	7.7	8.6	8.8	8.0	5.4
Mining	11.5	11.7	11.9	12.2	13.2	14.5	12.9	11.9	14.6	15.3
Construction	2.8	2.6	2.5	2.5	2.2	2.5	2.8	3.8	3.5	3.6
Services	41.5	43.1	41.6	40.9	45.6	47.6	52.1	52.1	48.9	50.1
Utilities	2.8	2.6	2.6	2.7	3.0	3.4	3.5	3.2	3.1	2.9
Transport	8.2	7.8	8.1	8.0	9.5	11.0	12.6	13.4	13.9	12.8
Trade	12.9	15.5	13.8	12.1	13.7	13.9	16.1	16.6	14.4	17.7
Other services	17.7	17.1	17.0	18.1	19.4	19.3	19.8	18.9	17.5	16.7

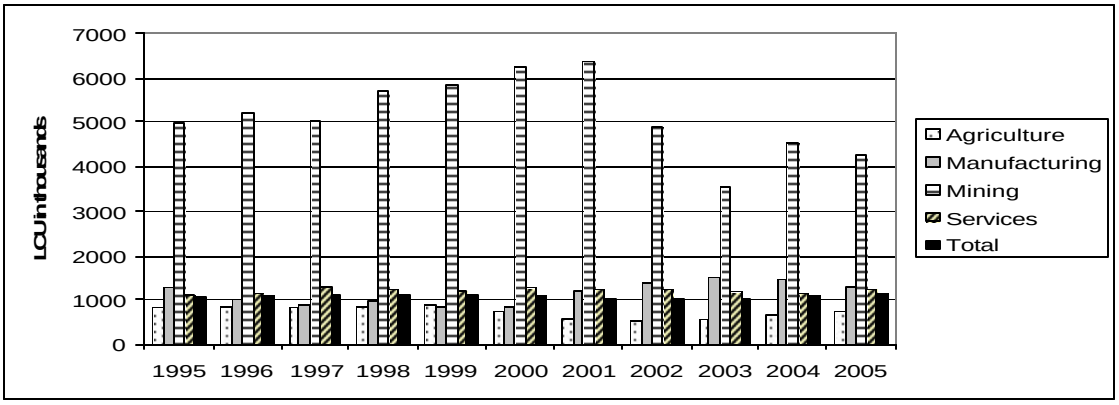
Source: World Bank, LDB
Note: Agriculture is dominated by livestock herding.

These trends reflect favorable commodity prices and declining prices of manufactured goods, and suggest that Mongolia has grown successfully by increasing its specialization in products in which it has comparative advantage.[33] But they also tell us that: (i) Mongolia's economy has become more vulnerable to terms-of-trade shocks, natural disasters and environmental degradation; (ii) Mongolian manufacturing firms are not competitive in world markets, and (ii) Mongolia uses its scare resource—labor—

[32] The mining share in total value added underestimates the contribution of the sector as it does not reflect the output of the artisinal mining sector.
[33] Mongolia's vast mineral wealth includes over 6000 known mineral deposits of 80 different minerals.

inefficiently.[34] Indeed, Mongolia's share in world manufactured exports has declined, and except for mining, its value added per worker is low (Figure A2.9).[35] Mongolia's agricultural sector employs 40 percent of the country's labor force, while it contributes only 25 percent of the total value added.

Figure A2.9: Value Added per Worker in Mongolia[36]



Source: Staff estimates based on data from Mongolian Statistical Yearbook (2004) and Government of Mongolia.

Economic diversification is, therefore, going to be imperative in order for Mongolia's growth path going forward to be broad-based. This report, especially, chapter 3 onwards, discusses how this can be done and provides specific policy measures that the government may want to implement in the short-to-medium-term in this regard.

[34] Mongolia is one of the largest landlocked countries in the world with a population of just 2.5 million.
[35] Labor productivity in the mining sector would be considerably lower if we include the output of artisanal miners.
[36] Economy-wide labor productivity growth estimated, as the value added at constant prices per worker, stagnated over the past ten years. Labor productivity in agriculture, which employs a sizable share of Mongolia's working age population, was lower than other sectors' labor productivity, and declined substantially after 2000, while in services labor productivity was only slightly higher than the average.

ANNEX III
Statistical Appendix

Table 1: National Accounts in Current Prices
(Tog million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP at market prices	646,559	832,636	817,393	925,346	1,018,886	1,115,641	1,240,787	1,461,169	1,910,881	2,266,505
GDP at factor cost	600,016	765,310	745,695	830,016	881,994	937,019	1,054,684	1,256,565	1,641,663	1,954,767
Agriculture	282,624	298,456	306,240	342,128	296,485	277,561	256,623	293,378	399,042	491,111
Industry	132,428	208,496	160,305	180,343	209,905	228,094	267,796	358,110	556,334	659,693
Mining and quarrying	67,233	119,230	68,346	79,780	116,161	100,832	125,896	185,788	365,565	461,306
Manufacturing	32,616	45,291	38,610	43,812	47,616	66,956	57,576	70,678	75,210	71,075
Services	184,963	258,358	279,149	307,545	375,604	431,364	530,264	605,078	686,287	803,963
Exports of goods & services	262,168	491,338	452,342	541,978	660,953	700,370	786,572	957,557	1,435,295	1,724,887
Imports of goods & services	313,278	441,508	562,622	670,826	831,015	911,680	1,051,168	1,242,806	1,665,597	1,892,897
Resource balance	-51,109	49,830	-110,280	-128,848	-170,061	-211,310	-264,596	-285,249	-230,302	-168,010
Total expenditures	697,669	782,806	927,674	1,054,193	1,188,947	1,326,951	1,505,383	1,746,418	2,141,183	2,434,515
Total consumption	524,621	617,738	700,797	790,041	913,220	1,052,154	1,194,449	1,278,361	1,509,253	1,680,346
General government	92,963	113,956	147,493	158,126	183,213	217,491	236,659	253,391	321,976	342,286
Private	411,343	435,295	492,141	553,667	637,149	707,252	869,117	937,070	1,121,203	1,288,204
Statistical discrepancy	-20,315	-68,487	-61,163	-78,248	-92,858	-127,411	-88,673	-87,900	-66,073	-49,857
Gross capital formation	193,363	233,555	288,040	342,400	368,585	402,209	399,608	555,958	698,003	804,026
Gross fixed capital formation	181,082	214,947	274,335	323,448	321,971	351,594	360,918	498,480	616,571	718,799
General government	15,749	19,683	23,133	19,707	28,371	34,685	34,936	51,397	57,967	54,498
Private sector	165,333	195,264	251,202	303,742	293,600	316,909	325,982	447,084	558,604	664,301
Chane in inventories	12,281	18,608	13,705	18,952	46,614	50,615	38,690	57,478	81,433	85,227
Gross domestic saving	121,939	214,898	116,597	135,305	105,666	63,488	46,338	182,808	401,628	586,159
Net factor income	-7,294	-9,480	336	102	-6,998	-2,205	-4,996	-13,185	-13,223	-60,506
Net current transfers	38,278	41,000	46,834	70,713	101,530	145,335	152,779	185,281	318,410	271,434
Gross national saving	152,923	246,419	168,767	206,120	200,197	206,618	194,121	354,904	706,814	797,086
Net indirect taxes	46,544	67,326	71,699	95,330	136,892	178,622	186,103	204,604	269,218	311,738
Indirect taxes	47,187	67,701	72,059	96,079	139,536	184,543	194,602	213,093	278,083	316,973
Subsidies	643	375	360	749	2,644	5,920	8,499	8,489	8,865	5,235
Gross national income*	639,266	823,156	817,730	925,448	1,011,887	1,113,436	1,235,790	1,447,984	1,897,657	2,205,999
GDP at market price (US$ million)	1179.0	1054.0	972.1	905.5	946.3	1016.3	1117.5	1274.4	1612.6	1880.4

Source: National Statistical Office of Mongolia

*GNI is different from NGO GNI number due to different formula

Table 2: National Accounts In Current Prices
(Percentage Shares to GDP)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP at market prices	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
GDP at factor cost	92.8	91.9	91.2	89.7	86.6	84.0	85.0	86.0	85.9	86.2
Agriculture	43.7	35.8	37.5	37.0	29.1	24.9	20.7	20.1	20.9	21.7
Industry	20.5	25.0	19.6	19.5	20.6	20.4	21.6	24.5	29.1	29.1
Mining and quarrying	10.4	14.3	8.4	8.6	11.4	9.0	10.1	12.7	19.1	20.4
Manufacturing	5.0	5.4	4.7	4.7	4.7	6.0	4.6	4.8	3.9	3.1
Services	28.6	31.0	34.2	33.2	36.9	38.7	42.7	41.4	35.9	35.5
Exports of goods & services	40.5	59.0	55.3	58.6	64.9	62.8	63.4	65.5	75.1	76.1
Imports of goods & services	48.5	53.0	68.8	72.5	81.6	81.7	84.7	85.1	87.2	83.5
Resource balance	-7.9	6.0	-13.5	-13.9	-16.7	-18.9	-21.3	-19.5	-12.1	-7.4
Total expenditures	107.9	94.0	113.5	113.9	116.7	118.9	121.3	119.5	112.1	107.4
Total consumption	81.1	74.2	85.7	85.4	89.6	94.3	96.3	87.5	79.0	74.1
General government	14.4	13.7	18.0	17.1	18.0	19.5	19.1	17.3	16.8	15.1
Private	63.6	52.3	60.2	59.8	62.5	63.4	70.0	64.1	58.7	56.8
Statistical discrepancy	-3.1	-8.2	-7.5	-8.5	-9.1	-11.4	-7.1	-6.0	-3.5	-2.2
Gross capital formation	29.9	28.1	35.2	37.0	36.2	36.1	32.2	38.0	36.5	35.5
Gross fixed capital formation	28.0	25.8	33.6	35.0	31.6	31.5	29.1	34.1	32.3	31.7
General government	2.4	2.4	2.8	2.1	2.8	3.1	2.8	3.5	3.0	2.4
Private sector	25.6	23.5	30.7	32.8	28.8	28.4	26.3	30.6	29.2	29.3
Chane in inventories	1.9	2.2	1.7	2.0	4.6	4.5	3.1	3.9	4.3	3.8
Gross domestic saving	18.9	25.8	14.3	14.6	10.4	5.7	3.7	12.5	21.0	25.9
Net factor income	-1.1	-1.1	0.0	0.0	-0.7	-0.2	-0.4	-0.9	-0.7	-2.7
Net current transfers	5.9	4.9	5.7	7.6	10.0	13.0	12.3	12.7	16.7	12.0
Gross national saving	23.7	29.6	20.6	22.3	19.6	18.5	15.6	24.3	37.0	35.2
Net indirect taxes	7.2	8.1	8.8	10.3	13.4	16.0	15.0	14.0	14.1	13.8
Indirect taxes	7.3	8.1	8.8	10.4	13.7	16.5	15.7	14.6	14.6	14.0
Subsidies	0.1	0.0	0.0	0.1	0.3	0.5	0.7	0.6	0.5	0.2
Gross national income	98.9	98.9	100.0	100.0	99.3	99.8	99.6	99.1	99.3	97.3

Source: National Statistical Office of Mongolia

Table 3: National Accounts In Constant 2000 Prices
(Tog million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP at market prices	907,222	943,496	976,824	1,008,236	1,018,886	1,029,542	1,070,681	1,130,285	1,251,427	1,329,455
Net indirect taxes	73,927	77,961	83,016	99,817	136,892	156,463	172,391	179,582	209,026	223,308
GDP at factor cost	833,295	865,535	893,809	908,419	881,994	873,080	898,290	950,703	1,042,401	1,106,147
Agriculture	303,474	316,392	337,748	352,559	296,485	242,086	211,962	222,252	261,578	281,682
Industry	206,978	199,280	207,909	209,281	209,905	245,480	249,937	264,081	303,386	302,497
Mining and quarrying	95,775	101,074	106,257	111,053	116,161	126,625	116,183	113,507	152,486	169,730
Manufacturing	64,929	52,937	55,944	51,045	47,616	67,215	77,552	83,732	83,078	60,139
Services, etc.	322,843	349,863	348,152	346,579	375,604	385,515	436,392	464,371	477,437	521,969
					(Growth Rates,%)					
GDP at market prices	2.4	4.0	3.5	3.2	1.1	1.0	4.0	5.6	10.7	6.2
Net indirect taxes	20.0	5.5	6.5	20.2	37.1	14.3	10.2	4.2	16.4	6.8
GDP at factor cost	1.0	3.9	3.3	1.6	-2.9	-1.0	2.9	5.8	9.6	6.1
Agriculture	3.4	4.3	6.7	4.4	-15.9	-18.3	-12.4	4.9	17.7	7.7
Industry	-9.1	-3.7	4.3	0.7	0.3	16.9	1.8	5.7	14.9	-0.3
Mining and quarrying	5.7	5.5	5.1	4.5	4.6	9.0	-8.2	-2.3	34.3	11.3
Manufacturing	-23.6	-18.5	5.7	-8.8	-6.7	41.2	15.4	8.0	-0.8	-27.6
Services, etc.	6.4	8.4	-0.5	-0.5	8.4	2.6	13.2	6.4	2.8	9.3

Source: National Statistical Office of Mongolia

Table 4: Balance of Payments
(US$ million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Exports of goods and non-factor services	479.1	621.2	540.2	530.1	613.5	636.7	707.9	835.2	1210.5	1470.2
Merchandise (fob)	423.4	568.5	462.4	454.3	535.8	523.2	524.0	627.3	872.1	1055.8
Non-factor services	55.7	52.7	77.8	75.8	77.7	113.5	183.9	207.9	338.4	414.4
Imports of goods and non-factor services	572.5	593.1	671.0	656.4	771.2	829.2	946.0	1084.0	1404.7	1540.9
Merchandise (fob)	510.8	538.3	524.2	510.7	608.4	623.8	680.2	826.9	901.0	1065.0
Non-factor services	61.7	54.8	146.8	145.7	162.8	205.4	265.8	257.1	503.7	475.9
Resource balance	-93.4	28.1	-130.8	-126.3	-157.7	-192.5	-238.1	-248.8	-194.2	-70.7
Net factor income	-13.3	-12.0	0.4	0.1	-6.5	-2.0	-4.5	-11.5	-11.2	-50.2
Factor receipts	13.4	6.1	10.1	6.7	13.0	14.8	14.1	13.9	16.5	10.7
Factor payments	26.7	18.1	9.7	6.6	19.5	16.8	18.6	25.4	27.7	60.9
Net current transfers	69.8	51.9	55.7	69.2	94.3	132.4	137.6	161.6	268.7	225.2
Current receipts			5.5	17.6	25.0	40.3	126.9	167.1	230.9	266.4
Workers remittances	6.2	4.2	2.5	7.4	-4.3	25.0	64.4	74.3	146.3	133.8
Other current transfers			3.0	10.2	29.3	15.3	62.5	92.8	84.6	132.6
Current payments			3.6	3.6	16.9	92.1	42.3	54.9	50.2	41.2
Current account balance before official grants	-36.9	68.0	-74.7	-57.0	-69.9	-62.1	-105.0	-98.7	63.3	104.3
Off capital grants	63.6	47.7	53.2	61.8	98.6	107.4	73.2	87.3	122.4	88.0
Current account balance after official.grants	26.7	115.7	-21.5	4.8	28.7	45.3	-31.8	-11.4	185.7	192.3
Direct investment, Net	15.9	25.0	18.9	30.4	53.7	43.0	77.8	131.5	92.9	182.3
Long term capital inflows, Net	56.1	79.3	105.2	92.0	82.7	68.6	102.4	-152.1	54.2	-3.4
Total other items (net)										
Net short-term capital	-30.7	-77.3	4.5	-54.7	-46.6	-13.9	-22.7	-16.5	-26.5	-75.0
Capital flows not elsewhere included										
Errors and omissions	-26.9	-40.2	-50.2	23.6	-19.3	-32.2	14.1	-5.9	-5.7	-13.2
Changes in net reserves	-32.9	79.4	-11.4	45.3	1.7	-19.5	-66.5	96.8	-34.6	-134.5
Gross reserves (excluding gold)	3.2	82.6	71.2	116.5	118.2	109.0	176.1	122.4	149.5	298.0
Gross reserves (including gold)	56.8	107.2	80.3	116.9	140.7	160.1	225.9	129.0	163.6	298.0
Exchange rates:										
Nominal official exchange rate (average)	548.4	790.0	840.8	1021.9	1076.7	1097.7	1110.3	1146.5	1185.0	1205.3
Nominal official exchange rate (end-of-year)	693.5	813.2	902.0	1072.4	1097.0	1102.0	1125.0	1168.0	1209.0	1221.0

Source: LDB

Table 5: Merchandise Exports by Destination
(US$ million, customs basis)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total Exports	424.4	568.5	462.3	454.2	535.8	521.5	524.0	615.9	869.7	1,064.9
Australia	0.0	29.6	33.9	7.2	12.5	10.0	17.7	34.5	0.1	14.2
United States	17.8	30.1	54.4	78.0	130.2	144.5	165.7	142.9	156.3	152.5
Belgium	2.3	1.3	3.4	0.9	1.6	1.3	0.2	0.5	0.7	1.1
South Korea	34.0	44.3	33.2	2.1	12.2	20.1	22.5	7.5	9.7	65.1
Germany	4.7	6.3	9.1	2.4	2.0	2.0	2.7	4.6	11.7	12.3
Italy	10.7	11.3	10.1	14.6	14.5	16.9	8.6	9.1	17.3	24.8
United Kingdom	19.3	72.0	33.2	32.2	17.5	12.4	17.5	26.1	137.4	87.1
Kazakhstan	14.7	0.7	0.5	0.3	1.0	1.1	0.8	2.8	0.2	0.6
Canada	0.1	0.0	0.2	0.4	0.8	1.0	0.6	0.7	14.7	122.1
Netherlands	4.1	2.7	3.5	3.7	3.4	3.5	3.2	2.2	3.3	4.6
Russian Federation	87.5	46.6	40.6	48.2	45.1	44.9	48.0	41.2	20.6	27.2
Poland	0.0	0.8	0.0	0.0	0.0	2.9	0.1	0.0	0.1	0.1
Singapore	0.1	0.0	1.3	0.9	0.1	0.2	0.1	35.0	19.9	0.6
Turkey	0.1	0.0	0.2	0.4	0.8	0.1	0.4	1.5	0.6	0.0
Ukraine	0.0	0.0	0.1	0.0	2.2	0.0	3.0	3.6	3.3	7.0
France	0.2	0.5	0.3	0.7	1.8	0.4	0.1	1.9	15.6	0.7
China	81.0	101.6	110.1	208.2	274.3	238.3	220.5	287.0	413.9	514.2
Czech Republic	0.3	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2
Switzerland	103.1	174.4	101.3	39.5	5.0	1.4	0.8	0.5	2.1	4.2
United Arab Emirates						1.5	0.3	0.2	0.2	0.1
India	0.3	0.3	0.1	0.6	0.4	0.1	0.0	0.1	0.6	0.1
Japan	35.0	37.7	12.6	10.9	8.1	15.7	6.3	8.5	33.4	5.8
Others	9.1	8.3	14.2	2.9	2.3	3.1	4.9	5.4	8.0	5.5

Source: National Statistical Office of Mongolia

Table 6: Physical Units of Exports

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						Raw materials					
Greezy cashmere	thous.tons	1.1	1.4	0.0	0.8	0.7	0.0	0.1	0.3	0.0	0.4
Horse hair	tons						788.4	604.9	797.3	766.9	811.2
Sheep wool	thous.tons	7.7	10.7	5.4	8.7	5.2	10.5	6.1	8.4	8.3	6.8
Camel wool	thous.tons	1.1	0.9	0.7	0.9	0.8	1.0	0.3	0.4	0.3	0.8
Horse mane	thous.tons	0.9	0.2	0.3	0.3	0.2	0.5	0.5	0.5	0.6	0.5
Cattle hide	thous.piece	266.8	276.8	311.9	461.4	1,058.5	370.5	54.7	13.1	2.0	
Horse hide	thous.piece	64.8	84.9	109.5	114.8	276.3	355.0	439.0	359.7	198.9	261.4
Sheep skin	thous.piece	1,970.0	2,203.6	2,304.5	1,984.1	2,640.0	853.5	448.6	91.3	98.3	2.7
Goat skin	thous.piece	388.0	416.1	66.6	127.8	110.5	86.8	69.0	31.9	5.6	17.2
Edible meet offal	tons	1,830.9	1,114.5	1,587.1	3,151.1	812.0	3,429.8	1,628.9	886.8	6.1	404.4
Crude petroleum	thous.barrel	-	-	43	84	68	86.1	129.4	159.5	180.4	188.1
						Processed, semi-processed product					
Copper concentrate	thous.tons	473.6	479.7	485.7	492.7	496.0	540.9	548.6	568.9	562.6	587.1
Molybdenium concentrate	thous.tons	5.1	4.1	4.1	4.2	3.0	3.0	3.5	4.0	2.3	2.4
Flourspar concentrate	thous.tons	158.9	147.9	121.8	164.1	197.1	214.1	192.5	257.4	289.1	311.4
Qualified steel	thous.tons	16.0	15.0	10.2	5.6	7.8	2.6	5.8	3.9	-	
Refined copper & copper alloys	thous.tons						1.4	1.5	1.4	2.7	3.0
Gold, unwrought or in semi-manufactured forms	tons						8.5	12.6	12.4	19.3	23.8
Coal	thous.tons	0.5	0.2	3.1	0.0	0.6	1.9	10.9	435.4	1,635.1	2,217.8
Timber	thous.m^3	-	1.3	0.5	8.6	5.9	-	0.1	0.0	0.1	0.0
Sawn wood	thous.m^3	104.6	168.7	268.1	38.3	2.5	0.1	-	-	0.2	0.5
Combed goat down	thous.tons	0.7	0.6	0.8	1.2	0.8	1.0	0.6	0.6	0.8	0.9
Tops of cashmere	tons	28.3	15.5	7.8	41.5	7.1	24.3	15.4	22.5	12.7	13.9
Intestine	tons	3,050.4	2,541.6	1,014.6	1,024.8	869.6	368.4	316.4	222.8	277.7	295.2
Meat	thous.tons	3.6	7.1	8.3	15.0	16.7	19.8	23.3	15.1	8.4	7.8
Deer bone horns	tons	220.4	206.2	126.3	55.8	125.1	97.2	91.8	65.5	26.1	29.0
Bonedust	thous.tons	1.1	3.4	4.1	6.5	2.4	1.2	-	-	-	20.0
Vodka	thous.l	45.2	0.0	45.7	759.5	472.7	1.4	19.8	21.3	40.8	26.8
Knitted or crocheted coat, jacket	thous.piece						30.9	382.0	6.5	0.7	15.3
Knitted or crocheted underwear	thous.piece						1,639.5	5,754.2	6,748.2	12,616.0	10,832.8
Knitted or crocheted sweater (jumper)	thous.piece						4,690.8	6,371.0	8,093.1	10,198.0	4,508.8
Knitted or crocheted gloves mittens	thous.pairs						1.2	5.4	2.2	2.4	11.9
Sewn coat, jacket	thous.piece						796.6	670.4	815.8	386.5	19.1
Sewn underwear	thous.piece						5,501.2	7,142.0	6,439.8	6,653.8	4,874.5
Sewn synthetic wearing apparel	thous.piece						56.8	3.7	-	0.5	0.0
Carpets	mln.m^2	2.2	3.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Blankets & travelling rugs	thous.piece						1.6	2.4	5.9	5.8	6.9
Of which:											
Camel wool	thous.piece	4.3	3.1	2.8	2.9	4.5	1.5	1.6	4.1	2.7	5.4
						Waste product					
Waste copper	tons	441.6	508.4	139.2	168.3	427.5	143.0	35.5	22.5	7.8	1.0
Aluminium scrap	tons	2,331.9	1,330.8	214.4	356.6	511.6	179.5	110.5	123.0	22.1	96.4
Iron scrap	thous.tons	75.3	77.6	22.1	10.9	10.4	8.9	3.0	4.1	20.3	6.0
Lead waste & scrap	thous.tons	0.9	0.8	0.4	1.6	1.4	1.1	1.1	2.9	5.2	0.5

Source: National Statistical Office of Mongolia

Table 7: Merchandise Imports by Origin
(US$ million, customs basis)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total Imports	450.9	468.3	503.3	512.8	614.5	637.7	690.8	801.0	1,021.1	1,184.3
Australia	2.0	0.8	2.5	0.5	1.3	1.4	11.3	19.6	15.5	14.1
Austria	0.5	1.5	15.9	0.4	1.9	0.7	0.8	5.5	4.7	0.9
United States	11.1	36.6	36.4	31.5	28.4	14.9	23.4	23.5	46.5	40.1
Belgium	2.4	1.3	2.1	2.0	2.4	6.4	4.3	5.9	3.4	4.7
Bulgaria	2.1	3.3	4.1	3.2	3.6	1.7	0.9	1.5	1.7	1.6
Belarus	9.1	0.9	1.4	2.4	4.2	7.8	5.6	3.0	5.5	5.1
Viet Nam	2.5	2.7	3.0	1.7	1.6	2.5	2.0	1.7	2.2	2.6
South Korea	18.0	21.0	37.7	36.2	55.6	58.3	86.3	67.7	61.2	63.7
Germany	21.5	20.4	25.9	23.6	29.7	30.3	30.4	38.0	33.5	37.6
Denmark	2.3	13.4	0.8	3.0	4.4	7.8	3.0	3.9	5.0	3.3
Israel	0.0	0.4	0.0	0.1	1.5	0.7	0.4	0.8	4.3	8.1
Indonesia	0.0	0.4	0.7	1.9	2.5	2.6	2.8	2.8	3.0	3.2
Spain	0.1	0.0	0.5	0.2	0.2	0.1	0.1	8.2	4.3	0.9
Italy	23.8	29.7	3.4	4.5	3.0	3.4	2.8	3.3	3.0	3.4
United Kindom	3.1	5.1	3.6	3.9	6.0	3.8	2.8	3.9	4.0	8.7
Kazakhstan	0.7	1.8	3.3	0.7	6.8	21.3	7.2	4.9	26.3	40.5
Canada	0.3	1.0	0.4	2.5	0.9	1.1	2.5	3.8	6.2	17.3
Kyrgyzstan						1.0	0.9	1.0	1.3	1.1
Netherlands	1.3	1.2	1.7	1.0	2.7	2.9	2.2	2.1	1.4	3.1
Malaysia	1.4	0.9	1.5	1.9	2.4	2.7	3.0	4.7	5.5	7.0
Russian Federation	154.9	165.9	150.2	149.8	206.2	226.0	237.6	265.4	341.9	417.9
Poland	3.5	5.0	6.8	4.5	4.9	5.3	5.7	8.0	8.7	10.0
Singapore	13.4	17.6	17.3	9.1	10.6	10.4	11.2	10.4	15.0	16.3
Taiwan, China	0.5	3.1	4.0	4.2	2.5	2.0	4.4	1.9	5.0	2.5
Thailand	0.2	0.4	0.6	0.5	1.4	0.4	0.6	1.4	4.7	0.9
Turkey	0.0	0.3	0.4	0.3	1.1	1.2	1.2	1.2	1.5	2.3
Ukraine	2.8	1.5	1.5	1.6	1.1	2.3	3.5	9.2	14.8	19.6
Hungary	2.1	1.7	2.0	1.4	1.7	1.4	1.5	3.8	7.2	3.4
Finland	0.8	1.9	6.2	5.7	4.7	3.9	3.4	2.7	2.5	2.8
France	1.3	10.8	26.5	8.5	8.3	6.2	4.8	10.8	14.9	29.4
Mainland, China	66.0	63.3	66.6	77.6	125.8	136.2	167.7	196.3	257.2	307.3
Czech Republic	8.0	7.3	6.7	4.9	3.5	7.1	3.6	5.8	4.5	5.1
Sweden						0.2	0.9	1.3	6.2	2.1
Switzerland	5.1	1.4	1.2	2.3	3.2	4.5	3.7	4.4	4.4	1.1
India	0.4	0.7	1.5	1.8	1.8	1.4	1.0	0.9	0.6	1.5
Japan	77.8	34.8	59.3	115.0	73.3	56.0	42.8	63.4	75.0	75.5
Others	11.9	10.2	7.6	4.4	5.3	1.8	4.5	8.3	18.5	19.6

Source: National Statistical Office of Mongolia

Table 8: Major Import Commodities

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						Consumer goods					
						Food commodities					
Wheat	thous.tons	0.0	17.3	46.5	18.2	92.2	29.9	139.3	61.5	114.9	97.5
Flour	thous.tons	100.2	66.4	45.3	38.2	99.2	92.8	96.9	75.2	79.3	103.9
Vegetable oil	thous.tons	1.7	0.8	0.3	0.1	1.1	0.3	0.1	0.1	0.6	0.2
Margarin	thous.tons	1.4	1.3	1.4	1.5	2.1	2.0	2.7	3.0	3.6	4.6
Butter	tons	104.9	96.7	183.8	80.9	55.0	62.4	18.6	55.1	5.0	8.4
Cranulated sugar	thous.tons	10.8	11.6	17.0	16.1	22.1	23.9	27.0	19.0	33.7	26.8
Candy	thous.tons	2.0	2.8	2.1	1.9	3.1	4.4	4.5	5.1	5.6	6.0
Flavoured flour product	thous.tons	1.8	1.8	1.7	2.0	3.6	5.0	5.7	5.2	5.8	6.1
Canned fruits, nuts	thous.tons						0.5	0.4	0.1	0.0	0.1
Rice	thous.tons	7.9	7.7	7.3	7.8	13.6	10.3	36.0	14.8	26.7	13.8
Millet	thous.tons	0.7	0.9	1.3	6.4	7.3	4.4	3.8	6.2	7.8	8.4
Green tea	thous.tons	0.9	0.9	1.3	0.9	1.7	2.2	2.2	1.9	2.2	1.5
Cigarette	mln.piece	671.7	1,013.3	1,247.1	1,263.0	1,746.2	971.7	703.7	673.0	764.7	629.3
Tobacco	tons	603.4	575.4	548.4	671.5	581.9	497.0	440.3	474.2	1,035.3	1,383.3
Potato	thous.tons	7.8	12.2	11.8	8.9	13.2	21.9	35.6	40.2	38.4	41.0
Onion, garlic	thous.tons	1.3	0.8	2.3	2.0	2.9	5.1	5.8	7.1	9.5	5.5
Fresh fruit	thous.tons	4.5	7.2	8.2	8.4	11.4	12.1	18.7	23.3	22.9	22.6
Soft drinks	mln.litres	0.5	4.3	3.8	5.8	8.9	9.2	5.0	5.0	4.9	4.2
Alcohol drinks	mln.litres	3.1	10.7	17.3	10.0	18.9	14.3	15.6	17.2	19.5	9.4
Oh which:											
Beer	mln.litres	0.5	9.3	16.5	9.3	17.8	13.3	14.1	15.7	12.9	7.8
Soap	tons	3,586.4	4,366.5	5,194.1	5,477.6	5,717.4	6,567.6	6,248.3	6,000.5	6,075.9	6,261.5
Detergent	tons	558.7	592.6	979.4	1,048.6	1,326.8	1,413.1	1,579.1	2,283.1	2,197.0	2,751.1
Packet medicine	tons						698.4	650.4	970.7	784.8	790.7
Plastic bottle, box	mln.piece						60.5	87.7	94.5	97.2	115.3
Synthetic paper fabric	mln.m^2						9.4	5.9	9.4	11.8	10.7
Cotton fabrics	mln.m^2	3.0	5.2	6.0	10.7	15.4	11.6	15.7	8.8	4.9	8.7
Leather footwear	thous.pairs						124.5	35.8	31.6	39.3	34.1
Refrigerator, freezer	thous.piece	2.3	2.9	4.4	4.1	6.1	6.7	14.8	25.9	39.4	29.9
Electric domestic appliances	thous.piece						80.9	86.3	70.0	158.1	93.5
Vacuum cleaner	thous.piece	6.0	10.2	9.9	8.7	12.5	16.7	14.9	11.1	25.5	26.0
TV, video monitors & video projectors	thous.piece	15.2	18.4	16.5	16.8	25.1	22.5	34.3	36.7	49.5	41.4
Line telephone sets with cordless handsets	thous.piece						39.5	43.8	82.3	14.0	14.8
Data processing equipment, its spare parts	thous.piece	49.3	17.4	12.7	11.9	25.7	43.9	60.6	64.6	75.6	114.0
						For production and technical purposes					
Window glass	thous.m^2	287.5	305.7	328.0	183.4	289.2	486.9	653.7	710.1	743.3	818.5
Nitrogen	thous.tons	6.1	8.5	12.6	9.0	10.4	13.3	14.4	12.4	18.4	13.3
Cement	thous.tons	1.9	1.5	7.5	3.3	12.7	27.4	52.6	85.9	131.8	175.1
Paper	thous.tons	1.1	1.0	1.0	0.7	1.4	1.1	1.2	1.7	2.2	2.2
New tyre	thous.piece	45.8	60.2	75.6	109.3	113.1	116.7	150.0	130.4	148.1	121.2
Steel tubes, steel parts	tons						4,040.6	3,223.5	5,806.2	3,189.9	5,999.4
Other tubes, pipes & bollow profiles	tons						1,551.2	3,575.0	4,102.3	5,114.2	4,918.0
Liquid pump	thous.piece						35.2	24.0	17.9	39.5	23.2
Printing machinery, machines & their auxiliary parts	piece						777.0	276.0	572.0	605.0	932.0
Cars	piece	2,996.0	1,737.0	5,690.0	4,862.0	11,509.0	8,374.0	7,187.0	10,320.0	12,933.0	14,366.0
Trucks	piece	297.0	299.0	1,193.0	2,769.0	3,061.0	1,878.0	1,868.0	2,870.0	4,926.0	6,237.0
Spare parts for vehicles	thous.piece						296.5	388.4	304.1	408.4	305.1
						Fuel, energy					
Petrol	thous.tons	193.2	178.9	212.2	193.2	233.7	247.2	243.7	259.1	270.1	254.8
Diesel	thous.tons	120.4	128.2	130.1	159.4	161.7	197.1	190.6	214.8	258.2	270.9
Jet fuel	thous.tons	27.5	24.7	20.8	15.9	18.4	22.8	20.5	23.9	22.8	18.9
Mazut	thous.tons	33.6	34.5	31.8	22.7	14.6	17.5	9.5	12.4	11.1	4.9
Lubricant	thous.tons	0.4	0.5	0.4	2.5	1.5	2.9	6.3	2.7	1.7	1.8
Electricity	mln.kwt.h	374.8	344.4	367.8	223.1	181.5	151.4	158.0	173.1	240.9	175.5

Source: National Statistical Office

Table 9: External Debt: Disbursements and Repayments
(US$ million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
DISBURSEMENTS										
Public & publicly guaranteed long-term debt	78.4	138.4	96.8	105.0	75.2	82.5	82.0	111.1	128.8	91.9
Official creditors	78.4	138.4	96.4	105.0	75.2	82.5	82.0	111.1	128.8	91.9
Multilateral	46.8	108.0	52.7	63.7	47.3	54.6	41.9	72.4	93.0	48.4
of which IDA	11.0	33.8	16.7	14.2	14.1	23.5	13.9	29.6	0.0	13.8
of which IBRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bilateral	31.6	30.4	43.6	41.4	28.0	27.9	40.1	38.7	35.8	43.5
Private creditors	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bonds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial banks	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other private	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Private non-guaranteed long-term	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total long-term disbursements	78.4	138.4	96.8	105.0	75.2	82.5	164.2	111.1	128.8	91.9
IMF purchases	8.1	7.7	0.0	8.1	7.8	5.2	0.0	11.4	0.0	0.0
Net short-term capital	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0	0.0
Total disbursements	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	128.8	91.9
REPAYMENT DUE										
Public & publicly guaranteed long-term debt	34.0	49.6	21.2	6.7	21.8	28.1	32.2	265.4	64.5	16.6
Official creditors	14.9	33.3	5.7	3.8	19.1	26.8	32.1	265.2	14.5	16.6
Multilateral	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.7	3.9	5.8
of which IDA	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	1.5	1.9
of which IBRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bilateral	14.9	33.3	5.7	3.8	19.1	26.8	30.8	263.6	10.5	10.8
Private creditors	19.1	16.3	15.5	2.9	2.7	1.3	0.1	0.1	50.0	0.0
Bonds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0
Commercial banks	4.1	4.1	4.1	0.3	0.3	0.1	0.1	0.1	0.0	0.0
Other private	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Private non-guranteed long-term debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total long-term repayments due	34.0	49.6	21.2	6.7	21.8	28.1	32.2	265.4	64.5	16.6
IMF repurchases	10.0	0.9	1.3	3.8	6.4	6.8	7.7	8.6	7.2	5.9
Total long-term repayment & IMF repurchase										22.5
NET FLOWS										
Official creditors	63.5	105.2	90.7	101.2	56.1	55.7	50.0	-154.2	-154.1	75.3
of which IDA	11.0	33.8	16.7	14.2	14.1	23.5	13.3	27.9	28.9	11.9
of which IBRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COMMITMENTS										
IBRD commitments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
of which fast disbursing	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0	0.0
IDA commitments	35.0	28.7	5.0	12.0	32.0	64.0	28.7	7.5	18.0	0.0
of which fast disbursing	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0	0.0

Source: World Bank: World Debt Tables.

Table 10: External Debt: Interest and Debt Outstanding
(US$ million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
INTEREST DUE										
Public & publicly guaranteed long-term debt	8.1	11.6	6.9	9.4	9.4	9.8	11.8	12.1	15.3	14.6
Official creditors	5.2	9.1	5.7	8.9	9.1	9.7	11.8	12.1	14.0	14.6
Multilateral	1.6	2.0	2.8	3.5	4.1	4.1	4.7	5.6	7.0	7.9
of which IDA	0.5	0.5	0.7	0.9	1.0	1.0	1.2	1.4	2.3	2.4
of which IBRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bilateral	3.6	7.1	3.0	5.4	5.0	5.6	7.1	6.4	6.9	6.8
Private creditors	2.9	2.5	1.2	0.5	0.3	0.1	0.0	0.0	1.3	0.0
Bonds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
Commercial banks	0.4	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other private	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Private non-guaranteed long-term debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest arrears										
Reduction in arrears (-)										
Total long-term interest due	8.1	11.6	6.9	9.4	9.4	9.8	11.8	11.2	15.3	14.6
IMF service charges	0.5	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.0
Interest on short-term debt										
Total interest due										
DEBT OUTSTANDING AND DISBURSED (DOD)										
Public & publicly guaranteed long-term debt	485.8	533.3	650.0	841.1	833.4	823.7	949.0	1137.5	1316.0	1276.8
Official creditors	440.8	507.8	639.5	835.3	830.8	822.8	948.3	1136.9	1316.0	1276.8
Multilateral	205.9	295.9	367.8	446.7	462.1	483.4	567.3	688.0	818.1	794.9
of which IDA	67.6	97.1	118.0	129.7	137.1	154.9	180.5	227.0	287.3	276.2
of which IBRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bilateral	234.9	211.9	271.6	388.5	368.8	339.4	381.0	448.9	497.9	481.9
Private creditors	44.9	25.6	10.6	5.8	2.5	0.9	0.7	0.0	0.0	0.0
Bonds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial banks	10.3	6.1	2.5	1.4	1.1	0.9	0.7	0.6	0.0	0.0
Other private	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0	0.0
Private non-guaranteed long-term	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total long-term DOD	485.8	533.3	650.0	841.1	833.4	823.7	949.0	1137.5	1360.2	1311.8
Use of IMF credit	43.6	47.6	48.3	51.4	50.3	46.8	42.6	49.4	44.2	35.0
Short-term debt	4.8	25.3	28.4	21.6	12.8	14.4	44.2	285.2	0.0	0.0
Total external debt										
MEMORANDUM ITEMS										
% Debt on concessional terms	407.3	495.0	632.3	818.7	817.8	809.8	935.3	1123.9	1360.2	1311.8
% Debt at variable interest rates	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Source: World Bank, World Debt Tables.

Table 11: Government Budget
(Tog million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total revenues, incl. grants	160,050.7	212,141.0	225,505.5	254,787.0	351,083.5	439,289.9	477,048.9	553,889.3	713,113.5	837,858.3
Total current revenues	155,932.5	206,001.4	216,834.2	247,859.3	346,205.1	429,951.3	469,748.6	545,227.1	706,292.7	832,584.7
Direct taxes	64,081.6	83,862.0	67,540.4	68,829.2	102,098.8	118,461.2	126,831.5	162,789.9	226,221.5	274,135.9
Indirect taxes	56,896.1	80,109.0	86,463.9	112,403.4	158,541.8	209,741.9	232,347.7	258,179.3	356,897.4	418,070.6
Nontax receipts	34,954.8	42,030.4	62,829.9	66,626.7	85,564.5	101,748.2	110,569.4	124,257.9	123,173.8	140,378.2
Expenditures and net lending	211,264.6	287,623.9	342,201.3	365,533.9	422,526.5	485,055.2	548,639.3	615,771.1	752,486.4	764,597.1
Total current expenditures	129,781.6	192,587.9	222,477.3	247,850.3	314,118.7	366,700.8	413,467.1	434,831.6	538,699.2	600,288.7
Interest on external debt	3,729.4	4,134.3	3,588.7	5,839.7	8,994.2	8,921.0	12,174.4	12,826.5	17,741.6	18,337.9
Interest on domestic debt	203.5	14,177.2	7,505.7	9,222.6	9,196.7	7,592.7	7,407.6	4,822.8	4,327.9	2,344.9
Other current transfers	27,711.7	43,144.1	55,462.2	64,554.7	84,744.8	89,411.6	101,146.2	115,989.0	149,088.9	184,768.2
Subsidies	733.1	375.3	360.4	692.5	2,644.5	6,069.3	8,781.8	9,376.7	11,339.6	8,118.1
Consumption	97,403.9	130,757.0	155,560.3	167,540.8	208,538.6	254,706.3	283,957.2	291,816.6	356,201.0	386,719.6
Capital revenues	96.0	101.0	121.3	37.1	85.6	162.2	458.6	0*	769.0	982.9
Total capital expenditures and net lending	81,483.0	95,036.0	119,724.0	117,683.6	108,407.7	118,354.3	135,172.2	180,939.5	213,787.2	164,308.4
Capital transfers and net lending	6,284.0	65,625.0	85,756.0	80,223.5	56,159.8	59,664.8	67,071.9	90,474.5	108,900.4	74,490.3
Total deficit financing	50,826.2	75,507.9	116,640.4	109,831.8	70,993.0	59,871.4	71,968.5	51,112.5	39,372.8	-73,261.2
External capital grants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
External borrowing (net)	34,666.0	92,777.0	68,558.2	105,836.0	66,573.5	69,611.1	81,772.9	-115,811.2	77,416.5	89,980.0
Monetary system credit (net)	12,300.0	-25,400.0	33,554.1	-200.0	-6,962.0	-25,132.2	-26,622.3	138,722.3	-5,709.7	-7,115.8
Other domestic borrowing (net)	3,860.0	8,129.0	14,494.2	11,707.7	11,381.6	15,392.5	16,817.9	28,201.4	-32,333.9	-156,125.4

Source: LDB

*No capital revenue in 2003. Due to methodology, such revenue is recorded under the privatization income of the general balance.

Table 12: Government Budget
(Percentage of GDP)

	1996	1997	1998	1999	2000	2003	2004	2005
Total revenues, incl. grants	24.75	25.48	27.59	27.53	34.46	37.91	37.32	36.97
Total current revenues	24.12	24.74	26.53	26.79	33.98	37.31	36.96	36.73
Direct taxes	9.91	10.07	8.26	7.44	10.02	11.14	11.84	12.10
Indirect taxes	8.80	9.62	10.58	12.15	15.56	17.67	18.68	18.45
Nontax receipts	5.41	5.05	7.69	7.20	8.40	8.50	6.45	6.19
Expenditures and net lending	32.68	34.54	41.86	39.50	41.47	42.14	39.38	33.73
Total current expenditures	20.07	23.13	27.22	26.78	30.83	29.76	28.19	26.49
Interest on external debt	0.58	0.50	0.44	0.63	0.88	0.88	0.93	0.81
Interest on domestic debt	0.03	1.70	0.92	1.00	0.90	0.33	0.23	0.10
Other current transfers	4.29	5.18	6.79	6.98	8.32	7.94	7.80	8.15
Subsidies	0.11	0.05	0.04	0.07	0.26	0.64	0.59	0.36
Consumption	15.06	15.70	19.03	18.11	20.47	19.97	18.64	17.06
Capital revenues	0.01	0.01	0.01	0.00	0.01	0.00	0.04	0.04
Total capital expenditures and net lending	12.60	11.41	14.65	12.72	10.64	12.38	11.19	7.25
Total deficit financing	7.86	9.07	14.27	11.87	6.97	3.50	2.06	-3.23
External capital grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
External borrowing (net)	5.36	11.14	8.39	11.44	6.53	-7.93	4.05	3.97
Monetary system credit (net)	1.90	-3.05	4.11	-0.02	-0.68	9.49	-0.30	-0.31
Other domestic borrowing (net)	0.60	0.98	1.77	1.27	1.12	1.93	-1.69	-6.89

Source: LDB

Table 13: General Government Revenue
(Tog million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total revenue	159,954.6	212,040.1	225,505.5	254,787.0	351,083.5	439,289.9	477,048.9	553,889.3	713,113.5	837,858.3
Current revenue	155,932.5	206,001.4	216,834.2	247,859.3	346,205.1	429,951.3	469,748.6	545,227.1	706,292.7	832,584.7
Tax revenue	120,977.7	163,971.0	154,004.3	181,232.6	260,640.6	328,203.1	359,179.2	420,969.2	583,119.0	692,206.5
Income tax	45,608.1	62,620.0	41,481.1	39,044.3	62,826.1	64,504.5	72,433.9	97,584.7	144,132.2	178,539.2
Corporate tax	39,226.8	54,878.8	31,339.0	26,450.9	47,996.1	43,828.7	46,268.8	68,781.4	98,613.9	120,552.6
Personal income tax	6,381.3	7,741.2	10,142.1	12,593.4	14,830.0	20,675.8	26,126.1	28,803.3	45,518.3	57,986.6
Social security contributions	18,473.5	21,242.0	26,059.3	29,784.9	39,272.7	53,956.7	54,397.6	65,205.2	82,089.3	95,596.7
Property tax	-	78.4	240.2	299.3	262.9	1,716.9	3,350.4	4,597.6	5,742.3	6,328.9
Taxes on domestic goods, services	37,231.0	63,307.3	76,930.6	93,473.5	124,347.4	166,415.9	178,605.1	190,132.6	244,296.8	270,997.6
Value added tax	21,528.3	38,133.8	46,065.7	59,910.2	76,218.6	104,193.8	118,688.2	121,870.6	163,080.3	181,039.0
On domestic goods & services	10,687.2	19,829.0	21,072.1	28,915.9	30,182.1	45,756.2	40,696.0	47,927.1	57,417.2	70,645.1
On imported goods	10,841.1	18,308.4	24,993.6	30,994.3	46,036.5	60,395.5	77,992.2	94,331.1	136,923.6	157,504.2
VAT	-	-	-	-	-	-	-	-20,387.6	-31,260.5	-47,110.2
Excise tax	11,120.2	20,337.8	24,484.2	26,731.2	41,011.8	53,330.0	51,321.3	58,575.3	70,283.2	78,959.2
On domestic alcohol and tobacco	5,776.4	9,690.9	8,883.7	11,159.2	15,891.7	19,506.4	20,595.2	19,785.5	23,283.6	26,081.7
On fuel and gasoline	3,867.4	7,023.0	9,522.4	8,819.4	13,404.9	16,626.2	18,266.3	21,254.1	24,808.9	25,165.6
On imported alcohol, beer and tobacco	1,476.4	3,107.5	3,819.4	3,698.6	4,470.0	6,183.9	6,431.6	6,986.0	7,457.6	8,308.6
On vehicles	-	516.4	2,258.7	3,054.0	7,245.3	7,332.0	6,028.2	10,549.6	14,733.1	16,704.3
Income of special purposes	4,582.5	4,835.7	6,380.7	6,832.1	7,117.0	8,892.0	8,595.6	9,686.7	10,933.4	10,999.4
On fuel and gasoline						5,454.5	4,850.3	5,703.1	6,107.4	5,939.7
On vehicles						3,437.5	3,745.3	3,983.6	4,826.0	5,059.7
Taxes on foreign trade	13,917.4	8,790.6	1,509.0	9,013.4	22,305.9	27,018.7	24,592.5	32,646.7	44,719.3	56,974.3
Customs duties	12,874.6	7,231.6	748.8	5,852.0	17,152.9	26,441.3	23,767.3	31,058.6	40,783.3	53,170.0
Export duties	1,042.7	1,559.0	760.2	3,161.4	5,153.1	1,027.3	825.2	1,588.1	3,936.0	3,804.3
Other taxes	5,747.7	7,932.7	7,784.0	9,167.2	11,625.6	14,590.5	25,799.7	30,802.4	62,139.0	83,769.8
Stamp fees						3,126.5	5,147.1	7,335.8	20,630.5	31,461.5
Royalty						3,743.0	10,972.8	11,299.3	25,042.8	31,674.9
Land payment						4,982.0	6,077.2	8,064.1	11,883.6	13,604.3
Fee on usage of timber						582.0	574.3	654.9	634.2	793.1
Hunting fee						1,581.6	2,154.6	2,605.5	2,685.0	2,818.0
Other fees						575.4	873.6	842.8	1,263.0	3,417.9
Nontax revenue	34,954.8	42,030.4	62,829.9	66,626.7	85,564.5	101,748.2	110,569.4	124,257.9	123,173.8	140,378.2
Dividends						19,865.8	6,402.6	1,284.8	4,107.4	22,763.8
Interest and fines						7,984.4	9,062.0	17,550.6	20,471.1	14,544.3
Rent						8,438.3	9,364.9	10,231.8	9,118.3	9,240.4
Navigation fee						10,389.8	12,500.0	12,613.7	13,431.4	14,500.0
Revenues from budget entities						47,169.7	47,953.6	65,040.8	65,212.5	68,780.7
MonglBank						1,500.0	8,954.2	8,427.9	5,000.0	0.0
Others						6,400.2	16,332.1	9,108.3	4,700.7	8,778.8
Capital revenue	96.0	101.0	121.3	37.1	85.6	162.2	458.6	-	769.0	982.9
Grants and transfers	4,022.2	6,038.6	8,550.0	6,890.6	4,792.8	9,176.4	6,841.7	8,662.2	6,051.8	4,290.7
From foreign governments	9,176.4	9,176.4	9,176.4	9,176.4	9,176.4	9,176.4	6,841.7	8,662.2	6,051.8	4,290.7

Source: National Statistical Office of Mongalia

Table 14: General Government Expenditure

(Tog million)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total expenditure	211264.6	287623.9	342201.3	365533.9	422526.5	485055.2	548639.3	615771.1	752486.4	764597.1
Current expenditure	129781.6	192587.9	222477.3	247850.3	314118.7	366700.8	413467.1	434831.6	538699.2	600288.7
Wages	36,714.9	44,758.3	44,950.0	63,510.1	86113.7	92060.4	105034.1	116945.9	128844.9	142749.0
Gooda and services	97,403.9	130,757.0	155,560.3	167,540.8	208538.6	254706.3	283957.2	291816.7	356201.0	386719.6
Subsidies and transfers	28,444.7	43,519.4	55,822.6	65,247.2	87389.2	95480.9	109928.0	125365.7	160428.6	192886.3
Subsidies to public enterprises	733.1	375.3	360.4	692.5	2,644.5	6,069.3	8,781.8	9,376.7	11,339.6	8,118.1
Other current transfers	27711.6	43144.1	55462.2	64554.7	84744.7	89411.6	100530.5	115271.9	147913.8	183981.2
Social security						64313.0	73306.4	87508.1	116243.4	132030.6
Other transfers						25098.6	5888.9	4547.1	6228.5	8730.6
Interst payments	3932.9	18311.5	11094.4	15062.3	18190.8	16513.6	19581.9	17649.3	22069.6	20682.8
Capital expenditure	26312.0	29411.5	33967.8	28313.3	52563.9	59135.2	68100.3	90465.1	104886.8	89818.1
From domestic sources	26312.0	29411.5	33967.8	28313.3	43647.3	48976.2	52264.2	67192.2	82710.4	79399.8
Domestic investment	15748.5	19683.3	23133.4	19706.5	28371.1	34684.8	34935.6	51396.5	57966.6	56232.2
Capital repairs	4688.8	2985.4	4238.9	3180.2	6242.6	5433.6	6868.9	5633.9	7268.8	5282.8
Road fund	4110.8	4779.3	4487.6	3481.0	5322.2	4873.5	4940.3	5493.5	11055.1	10713.9
Geological survey	1,013.7	818.0	780.0	885.8	976.9	981.0	1299.6	1438.8	1590.0	1831.5
Forest and other environment expenditure	104.8	167.1	169.9	243.9	519.1	634.4	567.4	855.4	1310.6	899.1
Commodity stocks	647.4	978.4	1,158.0	815.9	2215.4	2368.8	2966.0	2374	3519.3	4440.2
Foreign financed	-	-	-	-	8916.6	10159.1	15836.1	23272.9	22176.4	10418.3
Net lending	20504.5	65624.7	85756.3	85520.2	62970.5	63894.4	67071.9	90474.5	108900.4	74490.3

Source: National Statistical Office of Mongolia

Table 15: Monetary Survey

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					Tog billion, end of period					
Net foreign assets	60.1	125.7	76.9	145.5	197.8	215.8	309.2	246.2	311.0	570.2
Net domestic credit	140.7	94.1	188.0	170.2	131.8	165.4	241.8	608.0	647.3	816.0
Credit to government (net)	27.9	19.7	50.8	39.1	24.7	3.0	-20.9	113.0	40.5	-43.8
Credit to rest of economy	112.7	74.3	137.2	131.1	67.7	136.1	232.5	417.9	606.8	859.9
Private sectors	22.9	28.1	43.7	31.4	45.5	114.7	203.6	365.0	533.0	754.8
Other financial institutions	47.5	26.2	50.9	50.7	22.2	21.4	28.9	52.9	73.7	105.0
Total assets & liabilities	200.8	219.8	264.9	315.6	329.6	381.2	551.0	854.2	958.3	1,386.2
Money and Quasi-money	119.6	170.1	167.2	220.2	258.8	331.0	470.1	703.3	847.0	1,170.1
Other liabilities	81.2	49.7	97.7	95.5	70.8	50.2	80.9	150.9	111.3	216.1
					Annual percentage change					
Net foreign assets	39.6	109.2	-38.9	89.2	36.0	9.1	43.3	-20.4	26.3	83.3
Net domestic credit	166.4	-33.1	99.9	-9.5	-22.6	25.6	46.1	151.5	6.5	26.1
Credit to government (net)	-376.3	-29.4	157.8	-23.1	-36.8	-87.9	-799.7	-639.3	-64.1	-208.2
Credit to rest of economy	79.2	-34.1	84.6	-4.5	-48.4	101.1	70.8	79.8	45.2	41.7
Private sectors	-55.8	23.0	55.3	-28.1	44.8	152.1	77.5	79.3	46.0	41.6
Other financial institutions	328.8	-44.9	94.6	-0.5	-56.2	-3.4	34.9	83.1	39.4	42.4
Total assets & liabilities	109.5	9.5	20.5	19.2	4.4	15.7	44.5	55.0	12.2	44.7
Money and Quasi-money	17.2	42.2	-1.7	31.6	17.6	27.9	42.0	49.6	20.4	38.1
Other liabilities	-1,408.1	-38.8	96.5	-2.2	-25.9	-29.1	61.2	86.5	-26.3	94.2

Source: LDB

Table 16: Balance Sheets of the Bank of Mongolia, 2001-2005
(Tog million, end of period)

	2001	2002	2003	2004				2005			
				Mar	June	Sept	Dec	Mar	June	Sept	Dec
Net international reserves	160.1	225.9	129.0	149.8	155.9	154.0	163.6	186.5	212.2	255.0	298.0
Gross reserves/assets	206.7	268.2	203.4	195.9	201.1	197.5	207.8	227.8	251.4	291.4	333.2
Gross liabilities	46.59	42.3	74.4	46.1	45.2	43.5	44.2	41.3	39.2	36.3	35.1
Other foreign assets (net)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Assets	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liabilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Credit to gocernment (net)	-6,829.1	-32,439.3	96,687.3	77,945.9	61,165.9	46,391.0	40,506.5	15,718.6	1,353.7	-37,364.2	-43,847.3
Credit	46,028.2	30,742.6	211,121.0	172,125.4	162,072.9	146,841.3	136,525.8	130,425.4	115,254.7	114,292.7	102,540.0
Deposits	52,857.3	63,181.9	114,433.7	94,179.5	100,907.0	100,450.3	96,019.4	114,706.8	113,901.0	151,657.0	146,387.3
Credit to commercial banks	4,985.7	7,906.4	12,548.8	14,224.7	15,851.4	19,471.9	22,192.5	21,796.5	18,819.4	18,107.3	17,610.4
Credit to nonbanks	135,070.7	222,710.4	442,148.1	472,302.3	526,661.5	567,663.1	606,798.6	641,073.6	720,674.3	775,069.9	859,851.8
Public enterprises	9,534.4	11,318.3	15,647.4	15,495.6	14,293.9	13,019.3	12,560.1	13,504.8	22,284.6	21,182.2	34,112.2
Private sector	108,722.7	194,578.2	335,978.3	248,489.1	284,056.3	295,488.9	320,532.4	328,038.2	368,864.6	387,078.4	438,137.5
Other assets (net)	44,288,698.1	35,419,361.0	73,951,228.0	75,391,837.0	75,395,241.0	82,355,629.0	79,471,003.0	73,731,454.0	70,450,585.0	68,630,541.0	64,653,629.0
Reserve money	143.9	175.3	200.7	228.9	244.9	255.5	234.9	253.1	295.7	297.0	281.2
Currency outside the banks	109.2	120.8	131.5	139.7	170.1	163.0	143.5	132.7	176.8	174.4	152.4
Bank reserves	34.7	54.5	69.2	89.2	74.8	92.5	91.4	120.4	118.9	122.6	128.8
Cash held by banks	10.1	13.8	21.3	21.5	19.9	20.1	25.0	27.1	27.1	32.2	39.3
Demand deposits with the Bank of Mor	24.6	40.7	47.9	67.7	54.9	72.4	66.4	93.3	91.8	90.4	89.5
Deposit of public enterprises	23,280,819.6	30,844,089.3	48,669,575.7	51,769,740.4	59,135,264.6	33,769,910.2	39,310,229.3	50,104,277.9	48,311,126.5	75,679,661.2	100,464,786.2
Central bank bills	49.9	61.0	76.0	60.5	72.7	45.9	69.3	69.5	81.2	83.3	125.7

Source: BOM

Table: 17 Employment by Sector
(end of the year, thous. persons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total employment	769.6	765.1	792.6	813.6	809.0	832.3	870.8	926.5	950.5	968.3
Agriculture, hunting and forestry	358.1	374.5	394.2	402.6	393.5	402.4	391.4	387.5	381.8	386.2
Mining & quarring	18.3	20.1	18.6	19.0	18.6	19.9	23.8	31.9	33.5	39.8
Manufacturing	65.3	58.7	57.1	58.5	54.6	55.6	55.6	54.9	57.3	45.6
Electricity, gas and water supply	21.1	21.6	22.2	21.3	17.8	17.8	19.8	22.7	23.4	28.5
Construction	29.7	27.4	27.5	27.6	23.4	20.4	25.5	35.1	39.2	48.9
Wholesale & retail trade, repair of motor veh., motorcycl. And personal & household goods	68.5	67.9	74.5	83.1	83.9	90.3	104.5	129.7	133.7	141.9
Hotels & restaurants	13.9	15.1	15.3	16.1	13.3	16.5	20.9	23.3	28.4	29.5
Transport, storage & communication	31.6	30.3	33.4	34.9	34.1	35.1	38.8	39.5	42.2	42.4
Financial intermediation	8.3	7.4	7.4	7.7	6.8	7.3	9.4	12.6	15.9	16.1
Real estate, renting & business activities	8.3	4.9	5.1	5.0	7.2	6.8	10.9	9.3	11.2	9.0
Public administration and defence	31.4	31.8	30.9	31.5	34.7	41.0	43.9	44.8	46.2	46.7
Education	46.0	43.0	42.5	43.2	54.4	55.2	59.3	55.3	57.8	58.8
Health & social security	37.1	35.4	35.6	34.8	33.5	33.0	34.5	36.8	39.4	39.5
Community, social & personal services	24.6	23.3	25.1	25.2	29.0	26.9	27.5	37.0	34.5	26.7
Others	7.4	3.7	3.2	3.1	4.2	4.1	5.0	6.1	6.0	8.7

Source: National Statistical Office of Mongolia

Table 18: Annual Average Wages
(thous. tog in current prices)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total average					62.3	65.2	71.3	81.5	93.1	101.2
Agriculture, hunting and forestry					48.4	50.3	46.2	48.0	52.6	52.8
Mining & quarring					59.3	57.3	77.4	88.7	89.7	122.8
Manufacturing					66.0	66.6	68.7	82.7	92.8	100.5
Electricity, gas and water supply					72.8	77.5	81.0	97.1	111.8	119.6
Construction					70.2	73.7	90.6	85.9	99.6	110.9
Wholesale & retail trade, repair of motor veh., motorcycl. And personal & household goods					51.1	54.9	57.6	64.6	73.8	73.0
Hotels & restaurants					62.9	70.8	80.4	88.0	100.4	116.1
Transport, storage & communication					78.4	84.1	90.9	106.1	109.0	112.4
Financial intermediation					47.3	59.2	83.2	103.8	125.4	163.9
Real estate, renting & other business activities					50.5	58.7	55.3	65.3	66.0	68.3
Public administration and defence					56.7	59.3	66.5	78.2	94.4	106.2
Education					59.2	60.8	64.5	77.5	88.2	92.8
Health & social security					43.7	48.4	51.5	60.8	79.9	84.6
Community, social & other personal services					38.7	47.9	50.7	53.7	62.4	68.4

Source: National Statistical Office of Mongolia

Table 19: Total Fixed Asset Investment
(Tug billion at current prices)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total fixed investment	135.3	180.3	208.0	258.3	284.7	309.5	329.3	418.0	501.9	557.3
By technical composition:										
Construction Work	61.5	63.8	63.0	73.1	72.4	90.7	115.0	169.9	179.1	196.7
Machines, equipment, tools and stock	48.1	74.3	93.7	151.8	156.1	138.9	166.5	205.2	259.9	296.6
Others	25.7	42.2	51.3	33.4	56.2	79.9	47.8	42.9	62.9	64.0
By financial sources										
State & local budget	8.4	19.0	25.5	24.5	36.3	41.9	44.2	55.1	69.0	89.0
Bank loan	5.0	8.0	13.0	11.0	22.7	11.0	22.6	29.8	49.6	74.4
Own investment	39.4	40.0	69.9	75.7	56.5	55.7	52.1	67.7	142.8	100.4
Foreign loan, and grants	82.4	113.3	99.6	146.1	168.0	200.9	210.4	265.4	240.5	293.5
Others	-	-	-	1.0	1.2	0.0	-	-	-	
Total fixed asset investment (as percentage of GDP)										
Total fixed investment	20.9	21.7	25.4	27.9	27.9	27.7	26.5	28.6	26.3	24.6
By technical composition:										
Construction Work	9.5	7.7	7.7	7.9	7.1	8.1	9.3	11.6	9.4	8.7
Machines, equipment, tools and stock	7.4	8.9	11.5	16.4	15.3	12.5	13.4	14.0	13.6	13.1
Others	4.0	5.1	6.3	3.6	5.5	7.2	3.9	2.9	3.3	2.8
By financial sources										
State & local budget	1.3	2.3	3.1	2.6	3.6	3.8	3.6	3.8	3.6	3.9
Bank loan	0.8	1.0	1.6	1.2	2.2	1.0	1.8	2.0	2.6	3.3
Own investment	6.1	4.8	8.6	8.2	5.5	5.0	4.2	4.6	7.5	4.4
Foreign loan, and grants	12.7	13.6	12.2	15.8	16.5	18.0	17.0	18.2	12.6	12.9
Others	-	-	-	0.1	0.1	0.0	-	-	-	

Source: National Statistical Office of Mongolia

Table 20: Consumer Price Index of Certain Goods and Services by Groups (in percent)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					1991-1-16=100					
Overall index	6768.7	8156.9	8646.0	9507.6	10279.4	11099.2	11291.5	11821.9	13120.4	14361.7
Foodstuffs	7436.2	8276.6	8348.1	9105.7	9579.2	10420	10237.1	11024	12719.6	14693.7
Clothing, footwear	5041.5	6679.9	7384.4	7755.8	7728.8	8086.0	8541.7	8539.9	8643.3	8608.8
Housing, heating, electricity	2922.1	4400.2	4807.1	5046.9	6659.6	8113.0	8501.9	8343.2	8692.3	9060.5
Household goods	8439.4	10118.1	9429.9	9871.3	10140.0	10278.1	10504.5	10201.4	10708.5	11270.3
Medical care	2856.5	3561.1	3653.0	4302.8	4302.8	4276.6	4663.5	4894.6	5062.8	5420.2
Transport & communication	8310.6	9201.7	10926.1	13919.7	14381.5	14518.7	15073.8	15375.8	18760.3	19871.3
Cultural goos & recreation	13136.5	18802.0	22514.6	25990.3	27002.8	26550.7	27636.7	30756.8	33065.1	34907.7
Other goods & services	6345.8	7633.1	8856.4	9389.5	9751.6	10087.1	10517.4	11939.3	12905.2	13262.7
					Previous year=100					
Overall index	44.6	20.5	6.0	10.0	8.1	8.0	1.7	4.7	11.0	9.5
Foodsuffs	33.7	11.3	0.9	9.1	5.2	8.8	-1.8	7.7	15.4	15.5
Clothing, footwear	46.0	32.5	10.5	5.0	-0.3	4.6	5.6	0.0	1.2	-0.4
Housing, heating, electricity	72.7	50.6	9.2	5.0	32.0	21.8	4.8	-1.9	4.2	4.2
Household goods	42.3	19.9	-6.8	4.7	2.7	1.4	2.2	-2.9	5.0	5.2
Medical care	47.7	24.7	2.6	17.8	0.0	-0.6	9.0	5.0	3.4	7.1
Transport & communication	79.5	10.7	18.7	27.4	3.3	1.0	3.8	2.0	22.0	5.9
Cultural goos & recreation	56.6	43.1	19.7	15.4	3.9	-1.7	4.1	11.3	7.5	5.6
Other goods & services	51.8	20.3	16.0	6.0	3.9	3.4	4.3	13.5	8.1	2.8

Source: National Statistical Office of Mongolia

Table 21: Ouput of Major Agricultural Products
(thous. tons)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Meat, slaughter weight	259.9	240.5	268.3	289.0	310.6	226.4	204.4	153.4	204.1	193.1
Beef	90.0	86.6	99.3	104.6	113.4	66.9	60.7	43.6	57.3	48.6
Mutton and goat	121.3	104.4	120.2	128.9	120.0	104.6	94.9	80.9	97.8	94.8
Pork	0.3	0.2	0.2	0.3	0.9	0.5	0.3	0.2	0.2	0.2
Sheep wool	19.5	18.3	20.1	20.9	21.7	19.8	17.0	15.2	15.3	18.4
Cashmere	2.5	2.6	2.9	3.3	3.3	3.1	2.9	2.7	3.2	3.9
Milk	369.8	418.6	430.8	467.0	375.6	290.3	276.6	292.4	328.6	335.1
Eggs, mln. Piece	4.9	6.1	8.5	9.6	6.7	7.7	4.2	7.1	16.0	21.3
Cereals	220.1	240.4	194.9	169.5	142.1	142.2	125.9	165.0	138.5	75.5
Wheat	215.3	237.7	191.8	166.7	138.7	138.7	123.1	160.4	135.6	73.5
Potato	46.0	54.2	65.2	63.8	58.9	58.0	51.9	78.7	80.2	82.8
Vegetables	23.8	34.0	45.7	39.0	44.0	44.5	39.7	59.6	49.2	64.1
Hide and skin,thous. Piece	8,426.0	7,287.1	7,990.8	9,774.9	11,375.8	10,841.9	8,409.6	6,134.4	6,655.2	6927.1
Horse	323.8	302.9	330.2	394.0	712.4	590.4	428.1	256.1	317.9	328.0
Cattle	730.9	653.6	828.0	857.4	1,265.4	1,167.1	585.6	469.0	462.2	404.3
Sheep	4,923.7	3,986.5	4,440.4	4,571.4	5,183.5	5,131.0	4,424.6	3,434.7	3,243.4	3038.3
Goat	2,075.1	1,827.6	2,372.1	3,302.2	3,019.7	2,688.7	2,268.4	1,578.4	2,445.1	2793.4

Source: National Statistical Office of Mongolia

Table 22: Livestock
(thous. heads)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total	29,300.1	31,292.3	32,897.5	33,568.9	30,227.5	26,075.3	23,897.6	25,427.7	28,027.9	30,398.8
Camel	357.9	355.4	356.5	355.6	322.9	285.2	253.0	256.7	256.6	254.2
Horse	2,770.5	2,893.2	3,059.1	3,163.5	2,660.7	2,191.8	1,988.9	1,968.9	2,005.3	2,029.1
Cattle	3,476.3	3,612.8	3,725.8	3,824.7	3,097.6	2,069.6	1,884.3	1,792.8	1,841.6	1,963.6
Sheep	13,560.6	14,165.6	14,694.2	15,191.3	13,876.4	11,937.3	10,636.6	10,756.4	11,686.4	12,884.5
Goat	9,134.8	10,265.3	11,061.9	11,033.9	10,269.8	9,591.3	9,134.8	10,652.9	12,238.0	13,267.4
Of which: private livestock										
Total	27,365.2	29,529.0	31,356.3	32,278.7	29,236.7	25,335.6	23,280.0	24,888.8	27,517.5	29,901.7
Camel	342.6	343.8	346.4	346.4	315.5	278.3	247.2	251.8	252.1	250.0
Horse	2,670.6	2,807.4	2,982.6	3,097.3	2,609.4	2,152.2	1,953.0	1,937.5	1,973.4	2,001.2
Cattle	3,323.4	3,485.3	3,613.5	3,733.2	3,028.3	2,031.8	1,853.4	1,768.3	1,817.0	1,940.3
Sheep	12,184.6	12,912.0	13,630.1	14,306.5	13,206.0	11,439.0	10,232.4	10,417.6	11,376.9	12,582.9
Goat	8,844.1	9,980.5	10,783.8	10,795.3	10,077.5	9,434.2	8,994.1	10,513.5	12,098.1	13,127.4
				Percentage growth rates						
Total	2.5	6.8	5.1	2.0	-10.0	-13.7	-8.4	6.4	10.2	**8.5**
Camel	-2.6	-0.7	0.3	-0.3	-9.2	-11.7	-11.3	1.5	0.0	**-0.9**
Horse	4.6	4.4	5.7	3.4	-15.9	-17.6	-9.3	-1.0	1.8	**1.2**
Cattle	4.8	3.9	3.1	2.7	-19.0	-33.2	-9.0	-4.9	2.7	**6.6**
Sheep	-1.2	4.5	3.7	3.4	-8.7	-14.0	-10.9	1.1	8.6	**10.3**
Goat	7.2	12.4	7.8	-0.3	-6.9	-6.6	-4.8	16.6	14.9	**8.4**
Of which: private livestock										
Total	3.5	7.9	6.2	2.9	-9.4	-13.3	-8.1	6.9	10.6	8.7
Camel	-2.0	0.4	0.8	0.0	-8.9	-11.8	-11.2	1.9	0.1	-0.8
Horse	5.5	5.1	6.2	3.8	-15.8	-17.5	-9.3	-0.8	1.9	1.4
Cattle	5.8	4.9	3.7	3.3	-18.9	-32.9	-8.8	-4.6	2.8	6.8
Sheep	-0.1	6.0	5.6	5.0	-7.7	-13.4	-10.5	1.8	9.2	10.6
Goat	7.4	12.8	8.0	0.1	-6.6	-6.4	-4.7	16.9	15.1	8.5

Source: National Statistical Office of Mongolia

Table 23: Agricultural Land
(thous. hectares)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Agricultural land	118,969	128,891	129,132	130,358	130,541	130,174	130,170	115,581	115,456	115,233
Arable land	1,822	1,228	1,347	1,191	1,176	753	756	706	706	697
Meadows and pastures	117,147	127,663	127,785	129,091	129,294	128,951	128,937	113,090	112,976	112,752
Sown area	348	334	327	296	209	218	286	226	201	225
Cereals	333	317	307	279	195	200	263	207	173	159
Potatoes	7	7	8	9	8	9	10	8	9	10
Vegetables	3	4	6	5	5	6	7	6	5	6
Fodder crops cultures	4	5	5	2	1	2	3	3	5	5

Source: National Statistical Office of Mongolia

Table 24: Yields of Major Crops
(100 kg - centimeters per hectare)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cereals										
Wheat	6.7	7.6	6.4	6.1	7.2	7.2	5.9	7.9	8.1	4.8
Barley	7.6	6.2	5.5	5.9	8.7	5.6	8.2	12.5	6.1	6
Oats	1	0.5	2.7	1.5	2.1	4.6	3.9	11.4	6.8	6.9
Potatoes	66.4	81.3	80.3	72.8	74.7	65.6	56.4	93.4	88.3	84.8

Table 25: Output of Selected Industrial Commodities

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Electricity, mln. Kw.h	2,614	2,662	2,675	2,842	2,946	3,017	3,112	3,138	3,303	3,419
Thermal energy, thous. Gkal	6,404	6,457	6,522	6,421	6,885	6,597	6,868	7,133	7,747	7,806
Distribution of water, mln.m3	28	28	26	45	54	62	60	60	64	62
Coal, thous.ton	5,111	4,924	5,057	4,964	5,185	5,141	5,544	5,666	6,865	7,517
Crude oil, barrel	-	-	44,791	71,915	65,522	73,742	139,205	183,047	215,727	200,739
Copper concentrate with 35%, thous.tons	352	358	358	362	358	381	376	372	371	362
Molybdenium concentrate with 47%, tons	4,684	4,238	4,240	4,157	2,843	3,028	3,384	3,837	2,428	2,528
Gold, kg	6,976	8,451	9,531	10,246	11,808	13,675	12,097	11,119	19,418	24,122
Fluor spar concentrate, thous.tons	130	135	158	184	210	209	160	198	148	134
Fluor spar, thous.ton	565	567	612	597	734	585	514	488	468	508
Salt mining, tons	696	1,354	103	1,516	1,293	877	680	281	259	197
Copper, 99%, tons	-	2,703	2,322	1,545	641	1,476	1,500	1,341	2,376	2,475
Metal steel, thous.tons	19	23	16	13	13	10	16	39	55	66
Metal foundries, thous.tons	3	6	7	9	7	7	10	21	30	36
Sawn wood, thous.m3	70	37	36	16	15	21	10	17	18	13
Railway sleeper, thous.m3	14	14	15	16	16	19	18	38	21	19
Cement, thous.tons	106	112	109	104	92	68	148	162	62	112
Lime, thous.tons	55	58	56	50	37	30	43	42	30	81
Installed metal constructions, thous.m3	16	14	11	15	15	17	12	7	2	5
Metal sleeper, thous.piece	-	5	-	40	40	41	38	37	53	102
Bricks made from clay, mln.piece	25	16	19	17	17	21	13	23	13	15
Khurmen block, thous.piece	40	198	727	279	1	2	1	-	5	9
Building door and windows, thous.m2	3	5	3	2	2	5	3	59	1	3
National dwelling frame, mln.tug	108	186	96	68	72	79	69	39	98	118
Furniture, mln.tug	127	141	185	159	160	226	840	215	298	167
Combed down, tons	517	432	610	613	451	608	622	397	357	582
Scoured wool, thous.tons	1	1	1	1	1	2	1	1	2	1
Spun thread, tons	184	136	66	14	41	46	56	55	57	70
Carpet, thous.m2	667	644	588	629	705	615	534	663	690	587
Camel woolen blanket, thous.m	31	24	22	21	29	43	38	27	37	34
Felt, thous.m	96	75	103	102	114	111	113	303	68	69
Felt boots, thous.pairs	58	48	48	12	34	33	16	9	5	11

Source: National Statistical Office of Mongolia

Table 26: Electricity
(thous.kw)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total production of electricity	2997	3096	3042	3045	3127	3213	3279	3309	3474	3586
Gross generation	2,614	2,720	2,675	2,842	2,946	3,017	3,112	3,138	3,303	3,419
Imports	383	376	367	203	181	196	167	171	171	168
Exports		42	60	59	25	18	16	7	8	12
Total consumption of electricit	1,936	1,939	1,929	1,867	1,910	1,948	2,032	2,195	2,357	2,534
Industry and construction	1,226	1,264	1,210	959	1,182	1,204	1,260	1,361	1,459	1,569
Transport and communicatin	62	78	63	67	79	87	85	92	99	106
Agriculture	60	33	11	27	21	17	22	24	26	28
Communal housing	380	414	426	444	463	476	487	526	567	609
Losses in transmission & distri	482	507	465	509	576	603	583	489	480	420
Station use	579	608	588	610	616	644	649	618	629	621

Table 27: Transportation by Mode

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Freight turnover (million ton km)										
Total	2685.4	2686.1	2946.1	3623.3	4418.3	5427.3	6604.4	7504.1	9169.3	10267.1
Railway	2528.6	2554.2	2815.3	3491.7	4282.5	5287.9	6461.3	7253.3	8878.1	9947.7
Road	152.4	125.4	123.0	123.2	126.1	129.5	133.6	242.4	282.3	311.0
Air	4.3	6.3	7.7	8.2	9.4	9.5	9.0	8.4	8.9	8.3
Water transport	0.1	0.2	0.1	0.2	0.3	0.4	0.5	-	-	0.1
Freight carried (thous.tons)										
Total	9451.8	8436.5	8867.3	9534.0	10643.4	11810.5	13529.9	17622.8	21595.6	25206.2
Railway	7466.0	7309.7	7615.1	8199.3	9158.5	10147.7	11637.0	12284.7	14031.8	15586.3
Road	1982.0	1121.4	1247.4	1330.4	1480.4	1658.2	1888.7	5335.9	7561.9	9617.4
Air	2.7	3.8	3.5	2.8	2.9	2.9	2.4	2.2	2.3	2.0
Water transport	1.1	1.6	1.3	1.5	1.6	1.7	1.8	-	-	0.5
Passenger turnover (million passenger km)										
Total	1541.1	1725.7	1789.7	1800.7	1946.0	1972.2	2108.3	2246.3	2621.6	2696.6
Railway	733.4	950.6	981.3	1009.6	1067.2	1062.2	1066.5	1038.8	1218.9	1234.3
Road	425.1	331.7	339.9	358.4	364.2	371.1	380.6	556.5	644.6	639.8
Air	382.6	443.4	468.5	432.7	514.6	538.9	661.2	651.0	758.1	822.5
Passenger carred (million)										
Total	109.1	80.8	81.5	87.6	93.0	98.5	105.7	167.9	194.2	192.7
Railway	3.0	3.7	3.9	4.1	4.3	4.1	4.0	3.9	4.3	4.2
Road	105.9	76.8	77.3	83.3	88.4	94.1	101.4	163.7	189.6	188.2
Air	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3

Source: National Statistical Office of Mongolia

Table 28: Railway Transport

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Freight carried (thous.tons)	7466	7309.7	7615.1	8199.3	9158.5	10147.7	11637	12284.7	14031.8	15586.3
Loca	5,577	5,375	5,581	5,723	5,960	6,268	6,643	6,589	6,857	7,559
International	1,889	1,935	2,034	2,477	3,198	3,880	4,994	5,696	7,175	8,028
Exit	884	933	945	775	769	845	849	975	1,125	1,468
Entry	687	776	737	693	917	872	1,058	1,080	1,225	1,166
Transit	318	226	351	1,009	1,512	2,164	3,086	3,641	4,824	5,393
Freight turnover (million ton km)	2,529	2,554	2,815	3,492	4,283	5,288	6,461	7,253	8,878	9,948
Loca	1,241	1,204	1,274	1,346	1,458	1,650	1,775	1,783	1,916	2,160
International	1,287	1,350	1,542	2,145	2,825	3,638	4,686	5,471	6,962	7,787
Exit	633	779	839	728	737	821	808	962	1,095	1,272
Entry	301	323	313	298	410	415	453	467	513	529
Transit	353	248	390	1,120	1,679	2,402	3,426	4,042	5,355	5,987

Source: National Statistical Office of Mongolia

Table 29: Number of Educational Institutions

	1996	1997	1998	1999	2000	2001-02	2002-03	2003-04	2004-05	2005-06
Primary and secondary educational school-total	658	645	630	668	683	700	688	686	710	724.0
Primary	79	89	96	116	113	107	100	72	76	75
8-th grade	208	219	214	223	219.0	216.0	217.0	193.0	189.0	240.0
10-th grade	371	337	320	329	351	377	371	421	445	409
Schools with evening classes	159	87	107	118	106	124	170	232	326	289
University, higher educational institutions, colleges, technical and vocational schools-total	113	124	142	157	208	210	216	215	219	215
Public	62	63	67	70	70	71	72	78	76	82
Technical and vocational schools	33	34	34	35	32	30	30	31	33	33
Higher educational institutions and colleges	23	27	27	27	30	33	34	39	35	41
Universities	6	6	6	8	8	8	8	8	8	8
Private	51	61	75	87	138	139	137	130	137	127
Technical and vocational schools	5	4	4	4	4	2	1	1	2	2
Higher educational institutions and colleges	46	57	71	82	131	134	133	126	132	122
Universities	-	-	-	1	3	3	3	3	3	3
Branch of foreign universities	-	-	-	-	-	7	7	7	6	6

Source: National Statistical Office of Mongolia

Table 30: Number of Students
(thous. persons)

	1996	1997	1998	1999	2000	2001-02	2002-03	2003-04	2004-05	2005-06
Total	483.2	503.6	630.6	562.5	597.3	622.9	654.2	680.2	715.3	
Primary and secondary educational school-total	418.2	435.1	447.1	470	494.6	510.3	527.9	537.4	557.3	556.9
Of which: female				246.2	258.9	266	272.9	276.2	285.7	285.1
Schools with evening classes	9	4	4.9	5.4	3.6	4.9	6.8	11	12.1	10.7
Of which: female	4.1	1.9	2.3	2.5	1.7	2.3	3	5.1	5.8	4.8
University, higher educational institutions, colleges, technical and vocational schools-total	56	64.5	78.6	87.1	99.1	107.7	119.5	131.8	145.9	162
Public	43.1	48.5	57.6	62.1	68.8	75.3	86.5	95.4	105.5	114.1
Technical and vocational schools	10.9	12	11.7	10.9	11.9	14.9	19.3	21.3	21.4	22.3
Higher educational institutions and colleges	12.8	13.7	17.7	16.3	18.2	23	23.7	25.8	28	31.6
Universities	19.4	22.8	28.2	34.9	38.7	37.4	43.5	48.2	56.1	60.2
Private	11.9	14.4	19.3	23.2	28.3	30	31	34.3	39.5	46.7
Technical and vocational schools	0.4	0.3	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.9
Higher educational institutions and colleges	11.5	14.1	19.1	22.1	24.5	26	26.5	29.7	34.2	38.8
Universities	-	-	-	0.9	3.5	3.9	4.3	4.4	5.1	7
Branch school of foreign universities	-	-	-	-	-	0.4	0.4	0.5	0.4	0.5
Students studying abroad	1	1.6	1.7	1.8	2	2	1.6	1.7	0.5*	0.7

Source: National Statistical Office of Mongolia

* Number of students awarded by Government Agreement and Scholarship

Table 32: Number of Teachers in Educational Institutions

(thous persons)

	1996	1997	1998	1999	2000	2001-02	2002-03	2003-04	2004-05	2005-06
Total						29.4	30.6	31.2	32.4	33.6
Of which: female						22.3	22.9	23.8	24.6	25.7
Of which:										
Kindergartens						3.2	3.2	3.3	3.4	3.3
Of which: female						3.1	3.1	3.2	3.2	3
Of which:										
General educational schools	20.1	18.5	18	18.5	19.2	20.1	20.8	20.8	21.5	22.6
Of which: female	15.1	14.5	14.3	14.7	15.2	15.9	16.3	16.7	17.2	18.3
Technical and vocational schools						0.8	1	1.1	1.2	1.1
Of which: female						0.5	0.6	0.7	0.7	0.7
Universities, higher educational institutions and colleges						5.3	5.6	6	6.3	6.5
Of which: female						2.8	3	3.2	3.5	3.7

Source: National Statistical Office of Mongolia

Table 31: Number of Graduates in Educational Institutions

(thous persons)

	1996	1997	1998	1999	2000	2001-02	2002-03	2003-04	2004-05
Total						96.3	102.9	118.2	128.1
Of which: female						55.0	57.5	66.7	70.7
Of which:									
General educational schools	74.7	49.8	54.1	52.3	49.7	62.3	79.4	91.2	97.5
Of which: female				29.5	28.7	35.3	42.9	49.6	52.0
Technical and vocational schools						4.5	5.2	5.9	8.2
Of which: female						2.4	2.8	3.3	4.2
Universities, higher educational institutions and colleges						17.7	18.3	21.1	22.4
Of which: female						11.8	11.8	13.8	14.5

Source: National Statistical Office of Mongolia

Table 33: Some Indicators of General Educational Schools

	1996	1997	1998	1999	2000	2001-02	2002-03	2003-04	2004-05	2005-06
Gross enroment ratio, %										
In general education							96.6	98	97.6	92.3
In primary education							103.2	103.5	102.4	93.3
In secondary education							90.5	93.1	93.4	91.2
Number of drop-out school pupils aged 8-15, thous.persons										
Total						13.7	11.4	12	10.8	9
Of which: female						5.9	4.2	4.9	4.3	3.6
Drop-out ratio						2.8	2.2	2.3	2	1.6
Net enrollment ratio in primary education, %	97.6	98.3	99.2	99.2	95.0	93.2	89.3	90.0	92.1	93.3

Source: National Statistical Office of Mongolia

Table 34: Number of Preschool Institutions and Children

	1996	1997	1998	1999	2000	2001-02	2002-03	2003-04	2004-05	2005-06
Preschool institutions	705.0	690.0	692.0	671.0	680.0	679.0	668.0	701.0	707.0	740.0
Of which:										
Kindergartens	667.0	660.0	658.0	650.0	653.0	665.0	655.0	687.0	696.0	729.0
Of which:										
Creches section	-	-	190.0	177.0	166.0	156.0	162.0	155.0	141.0	175.0
Creches	38.0	30.0	34.0	21.0	27.0	14.0	13.0	14.0	11.0	11.0
Number of children, thous. Persons	70.3	71.6	75.6	79.5	81.2	84.7	88.7	94.0	86.1	95.0
Of which:										
Creches	2.3	1.6	1.6	5.2	1.9	1.1	1.0	3.7	3.4	3.7
Kindergartens	68.0	70.0	74.0	74.3	79.3	83.6	87.7	90.2	82.7	91.4

Source: National Statistical Office of Mongolia

Table 35: Main Indicators of Science

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of institutions	84	37	61	42	53	56	50	55	58	56
Number of employees	3411	2768	2936	2347	2755	3105	3562	3419	3219	3241
Of which:										
Full-time employees	2880.0	2496.0	2623.0	2141.0	2531.0	2752.0	2879.0	2638.0	2642.0	2283.0
Total expenditure, mln.tog	1683.2	1702.1	1807.1	1956.8	3414.3	3723.2	3903.4	4605.7	6322.5	7231.2
Of which:										
Technical science	273.4	296.3	391.0	439.9	1164.6	1212.6	1021.4	1571.6	1891.5	2154.7
Natural science	476.9	632.5	659.6	715.2	988.7	1052.5	1073.6	1387.0	1582.6	1727.4
Agricultural science	583.0	354.4	317.9	302.0	475.8	564.3	632.5	672.8	735.9	836.5
Medical science	148.5	192.9	187.7	204.7	285.2	96.1	381.8	362.1	402.1	761.7
Social science and humanities	201.4	226.0	250.9	238.8	306.8	496.4	425.1	612.2	733.1	792.2
Other	-	-	-	56.2	193.2	301.3	369.0	-	977.3	958.6

Source: National Statistical Office of Mongolia

Table 36: Main Indicators of Public Health

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of health institutions										
1. State health institutions										
Tertiary level hospitals and centers	14	21	23	19.0	19.0	17.0	17.0	19.0	17.0	17.0
Aimags and districts general hospitals	21.0	21.0	21.0	30.0	30.0	33.0	33.0	45.0	30.0	30.0
Intersoum hospitals	-	-	-	13.0	13.0	13.0	19.0	31.0	31.0	31.0
Soum hospitals	359.0	340.0	345.0	334.0	334.0	310.0	304.0	290.0	296.0	287.0
Per 10000 population:										
Physicians	26.0	25.0	24.0	26.0	27.0	27.0	28.0	27.0	26.0	27.0
Mid-level medical personnel	60.0	58.0	55.0	56.0	56.0	56.0	57.0	57.0	57.0	57.0
2. Private health institutions										
Private hospital	231.0	318.0	276.0	448.0	466.0	480.0	536.0	611.0	577.0	683.0
Family hospital	-	-	-	-	99.0	178.0	233.0	231.0	230.0	228.0
Drug store*	615.0	551.0	604.0	628.0	619.0	721.0	770.0	724.0	770.0	735.0
Hospital beds per 1000 population	9.9	7.8	7.5	7.6	7.5	7.5	7.6	7.3	7.3	7.2
Health expenditure, mln tog	22,390.0	28,579.5	30,038.2	35,658.3	45,951.6	53,096.1	57,963.5	57,561.0	73,243.0	80,151.7
Percentagge of health expenditure to total government budget expenditure	12.7	9.9	8.8	9.9	10.7	10.8	10.6	9.3	9.7	10.5
Per capita expenditure, tog	9,909.2	12,470.6	12,926.3	15,129.9	19,222.7	21,895.2	23,572.3	23,119.6	28,914.0	31,459.0

Source: National Statistical Office of Mongolia

* public and private drug store

Table 37: Income and Expenditure of Social Welfare Services for the State Budget (tog mln)

	1996		1998	1999	2000	2001	2002	2003	2004	2005
Total income of social welfare	3,786.4	7,604.7	8,341.2	12,013.0	13,110.1	14,065.0	17,362.7	20,561.4	24,364.9	43,294.1
Of which:										
Government budget	2476	7553.1	8276.4	11,797.0	11,335.4	13,995.5	17,247.2	20,352.3	23,102.6	43,159.9
Local government budget	23.5	27.3	9.5	11.3	1730.3*	17.3	22.3	15.8	14.1	39.6
Expenditure	4605.5	7182.8	8258.8	12205.1	13350.7	13,901.6	17,349.0	19,814.7	24,364.7	42,025.9
Of which:										
Pension	1031.1	1531.9	1590.7	2,747.0	3,588.8	3,816.0	4,367.9	5,739.2	7,067.9	7,699.7
Allowance	1753.5	3898.0	4199.7	6,358.0	5,968.8	7,495.5	9,506.5	10,054.1	11,092.3	28,251.3
for pregnancy and delivery	661.5	1754.5	1881.3	1,834.3	2,269.4	3,563.6	4,254.1	4,189.6	4,294.4	4,134.9
for caring children	655.5	1597.2	1760.4	2,852.3	2,866.7	3,297.6	4,343.7	4,807.4	5,705.8	5,736.9
for twin children	0.2	4.2	4.1	11.1	14.9	13.1	13.0	11.9	11.5	12.6
for adopted orphan children	294.4	6.5	12.0	15.7	38.2	48.3	76.0	96.7	111.6	122.2
for infant	61.0	40.0	68.1	63.3	89.2	62.3	112.0	146.0	186.3	166.0
for single person's funeral	1.9	0.4	-	0.5	1.5	1.9	3.5	4.3	2.9	1.9
for mothers having many children	79.0	495.2	473.8	1,580.8	688.9	508.6	704.0	798.2	779.8	18,087.0

Source: National Statistical Office of Mongolia

*budget lending

Table 38: Infant Mortality

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Mortality, by age										
Under 1 (infant)										
Under 3										
Infant mortality per 1,000 live births	40.0	39.6	35.3	37.3	32.8	29.5	29.6	23.0	22.3	20.7
Maternal mortality					110			109.5	98.8	93.0
Mother mortality with child born										

Source: National Statistical Office of Mongolia